DocuBrain® TechDoc

Release Notes
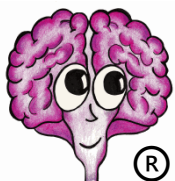
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DocuBrain® TechDoc 11.1.3 Release Notes

These release notes document the changes from TechDoc 11 to TechDoc 11.1.3. If you are new to TechDoc, you may also want to consult the release notes for TechDoc 11 to see what changes were introduced as part of that release as well.

The most significant changes in TechDoc 11.1 include moving to Java 17, a web-based forms editor, and a security review that included the removal of many third-party libraries, updates on all libraries and components wherever possible, and code changes based on reviews and static code analysis. In TechDoc 11.1.1, another significant change was the change to loads its root certificates from the Windows Local Machine's Trusted Root Certification Authorities (TRCA) store. In TechDoc 11.1.2, Java and Tomcat were updated for latest security and full support for new Render 11 features were added. In TechDoc 11.1.3, Java and Tomcat were updated for latest security.

Important notes: TechDoc 11.1 no longer supports Windows Server 2012 R2 or SQL Server 2014 since they are already end of life. If you are currently using either Microsoft product, please update to a newer, supported version of the operating system and/or database before installing or upgrading to TechDoc 11.1. TechDoc 11.1 currently supports Windows Server 2016 – 2025, SQL Server 2016 – 2022, and Azure SQL database.

The Lucene software used by the Search Manager has been updated to 9.12.1. As such, the SM will rebuild the search index as part of the upgrade process from TechDoc 11. This rebuild is not necessary when upgrading from TechDoc 11.1 to 11.1.*. Please be aware that a rebuild may take hours for all documents to be returned by the search engine after the upgrade is completed. Please postpone rebooting the SM until reindexing is complete or it will introduce delays in the rebuild process. The progress can be monitored by looking at the status of the Indexer Background Task on the SM. With a new feature of TechDoc 11.1, Admins who receive alerts from an SM will automatically receive and alert when the reindexing begins and when it completes.

NASA customers: As NASA has continued to harden their IT infrastructure, the DocuBrain team lost their access to test TechDoc in the NASA environment prior to TechDoc 11. Please be aware that it is always important (but especially now) that you thoroughly test an upgrade or fresh install of TechDoc 11.1 in your NASA test environment before deploying it to production. In the unlikely event that there is an issue, please reach out to us and we will attempt to address the problem as quickly as possible.

Changes from TechDoc 11.1 to TechDoc 11.1.1 are marked with the superscripted version number surrounded with square brackets; like this [11.1.1]. Changes from TechDoc 11.1.1 to TechDoc 11.1.2 are marked with the superscripted version number surrounded

with square brackets; like this [11.1.2]. Changes from TechDoc 11.1.2 to TechDoc 11.1.3 are marked with the superscripted version number surrounded with square brackets; like this [11.1.3].

Security-Related Issues

DM-877:   Update TechDoc DM to Java 17.0.14

The TechDoc DM has been updated to Java 17.0.14 for various vulnerabilities contained in Java used by the prior release of TechDoc as well as upgrading from Java 11 to Java 17 in order to stay current with Java technologies.

DM-881:   Updated the TechDoc DM to Use Tomcat 10.1.39

The TechDoc DM has been updated to support the latest Tomcat 10.1. While improving security, it also required porting the DM from Java EE 8 to Jakarta EE 10, which was a significant effort but necessary to ensure that TechDoc stays current with all of the latest enterprise technology.

DM-896:   Update Bouncy Castle Libraries Due to Security Issues

Bouncy Castle has been updated from 1.71 to 1.78.1 to address 6 CVE's that were present in the version TechDoc was using. While TechDoc's usage of the libraries negates most of the attack surface of the CVE's, this update removes them completely.

DM-908:   Updated the TechDoc DM to Use Tomcat 10.1.40 [11.1.1]

The TechDoc DM has been updated to support the latest Tomcat 10.1, which included a fix for an SSL and FIPS issue along with several other fixes that could affect TechDoc.

DM-914:   Update TechDoc DM to Java 17.0.15 [11.1.1]

The TechDoc DM has been updated to Java 17.0.15 for various vulnerabilities (including several CVEs) contained in Java used by the prior 11.1 release of TechDoc.

DM-920: **Update TechDoc DM to Java 17.0.16 and Tomcat 10.1.43** [11.1.2]

The TechDoc DM has been updated to Java 17.0.16 and Tomcat 10.1.43 for various vulnerabilities contained in Java and Tomcat used by the prior 11.1.1 release of TechDoc including several CVEs and for several resource leaks that were in Tomcat.

DM-926: **Update TechDoc DM to Java 17.0.17 and Tomcat 10.1.48** [11.1.3]

The TechDoc DM has been updated to Java 17.0.17 and Tomcat 10.1.48 for various vulnerabilities contained in Java and Tomcat used by the prior 11.1.2 release of TechDoc including several CVEs.

SM-192: **Update TechDoc SM to Java 17.0.14**

The TechDoc SM has been updated to Java 17.0.14 for various vulnerabilities contained in Java used by the prior release of TechDoc as well as upgrading from Java 11 to Java 17 in order to stay current with Java technologies.

SM-193: **Updated the TechDoc SM to Use Tomcat 10.1.39**

The TechDoc SM has been updated to support the latest Tomcat 10.1. While improving security, it also required porting the SM from Java EE 8 to Jakarta EE 10, which was a significant effort but necessary to ensure that TechDoc stays current with all of the latest enterprise technology.

SM-208: **Updated the TechDoc SM to Use Tomcat 10.1.40** [11.1.1]

The TechDoc SM has been updated to support the latest Tomcat 10.1, which included a fix for an SSL and FIPS issue along with several other fixes that could affect TechDoc.

SM-209: **Update TechDoc SM to Java 17.0.15** [11.1.1]

The TechDoc SM has been updated to Java 17.0.15 for various vulnerabilities (including several CVEs) contained in Java used by the prior 11.1 release of TechDoc.

SM-212: **Update TechDoc SM to Java 17.0.16 and Tomcat 10.1.43** [11.1.2]

The TechDoc SM has been updated to Java 17.0.16 and Tomcat 10.1.43 for various vulnerabilities contained in Java and Tomcat used by the prior 11.1.1 release of TechDoc including several CVEs and for several resource leaks that were in Tomcat.

SM-215: **Update TechDoc SM to Java 17.0.17 and Tomcat 10.1.48** [11.1.3]

The TechDoc SM has been updated to Java 17.0.17 and Tomcat 10.1.48 for various vulnerabilities contained in Java and Tomcat used by the prior 11.1.2 release of TechDoc including several CVEs.

Problems Resolved

DM-873: **Modify Remote User Group Fails With 2500+ Members**

Due to a recent update to Tomcat, modifying a Remote User Group with 2500+ members would fail. TechDoc raised an HTTP post setting in software that raised the limit on how many input fields a single screen can have. However, it is no longer honored that way and had to be fixed with a different method.

DM-885: **Form Submissions Need to Delete Form Submission Entries**

While reviewing code, it was found that it was possible when deleting Form Submissions, that corresponding Form Submission Entries could be left behind. Changes were made to prevent this condition from being missed.

DM-886: **Forms Need to Delete Associated Access**

While reviewing results in Verify Integrity, it was discovered that it was possible when deleting Forms, that corresponding Associated Access entries could fail to be deleted. Changes were made to prevent the associations from being left behind.

DM-887: **Verify Integrity Can Miss Forms Issues**

Verify Integrity could miss integrity issues with Associate Access entries on Forms. This has been fixed.

DM-889: **Shorten Remote User's Username to 128 Characters to Avoid Problems**

The Remote User's username needed to be shortened to a maximum of 128 characters to avoid problems when TechDoc calls underlying native APIs for Windows security services. Most systems have limits on usernames between 20 and 64 characters. Therefore, setting the limit to 128 will satisfy almost any needs out there while still avoiding the issues when calling native Windows APIs.

DM-911: **Fix Logic for Determining Full URL Paths From Current Servlet Request** [11.1.1]

An issue was reported where fetches that needed to get credentials could fail when the file name includes characters that need to be hex encoded. It appears that Tomcat recently changed when some values are returned from the servlet request encoded or already decoded.

As a result, an internal URL function could sometimes mistakenly leave the previous servlet name on the calculated URL before appending the new servlet name on to it; breaking fetches that included the combination of factors listed above.

DM-912: **DocuBrain Script Tooltips Not Appearing for Forms** [11.1.1]

Under certain conditions, tooltips did not display due to changes in TechDoc 11.1. This has been fixed.

DM-913: **Number Text Box in Forms Stuck When Validation Error Occurs** [11.1.1]

Under certain conditions, Number Text Box could become stuck in the error state when a validation error occurred due to changes in TechDoc 11.1. This has been fixed.

DM-921: **Fixed the issue with selected options disappearing when the focus changes in Google Chrome** [11.1.2]

Items in multiple selection boxes could disappear when the focus shifted. The problem was due to a recent change to Google's browser default CSS

styling. The result was that multiple selection box items could end up as white-on-white text thus making the text "disappear". A change has been made to TechDoc's CSS styling to prevent this condition.

Changes, Improvements, and New Features

DM-793: **Currency Form Submission Entries Should Have Better Numeric Database Support**

Currency fields on Form Submissions now set the Number Value column in their database record. Most other numeric columns already set the Number Value column but, on these fields, the currency mark ($, £, €, etc.) prevented Java from recognizing the value as a number. For currency fields, the string values are now scrubbed of any non-numeric currency characters before having Java attempt to recognize it as a number.

The original string value containing currency formatting is still saved as it currently is in the Value string column.

DM-855: **Update DM Chart.js Library to Newest Version**

The Chart.js library has been updated to the newest version as there are many new features and performance improvements. The internal syntax has had major changes so significant changes had to be made to DM dashboard logic to make the update.

DM-857: **Update Regression Tester to Use WebDriver Testing Mechanism**

The development team reviewed the Selenium web testing library we use in the regression tester and have found that moving to WebDriver is now a feasible solution. After making all the necessary changes to utilize the W3C standard WebDriver, we are now able to test newer, more complicated functionalities in the DM that were not previously possible.

DM-858: **Add Regression Tests for New Functionalities of the DM**

Due to the use of WebDriver in DM-857, we are now able to test many things that could not be tested with the old method. We more thoroughly test advanced search, workflow, and forms processing on the DM. Almost every aspect of the DM UI is now covered by automated regression testing.

DM-859:   Allow Read Access to be Changed Via Mass Modify Documents

A customer requested that the DM allow Read Access to be changed via Mass Modify Documents like other document attributes. This makes it very easy for someone to do things like find a set of documents that have Global Read Access set and change them to Community Read Access with very little effort.

DM-870:   Display Stack Trace on the SM Host Connectivity Test

Previously when an SM connectivity test failed, only the exception message was displayed. This could mask the actual root cause of the failure. As a result, an SM Connectivity test failure now produces a full traceback in order to assist with debugging the root problem of the failure.

DM-871:   Update the DM SQL Server JDBC Driver to 12.6

The Microsoft SQL Server JDBC driver used by the DM has been updated from 12.2 to 12.6 in order to gain performance and reliability as well as better support for Azure and newer SQL Server versions.

DM-872:   Add Session Timeout Warning and Logout to the DM

A session timeout warning has been added to the DM and allows the user to optionally extend the session by clicking on the warning dialog. If the user does not acknowledge it and the session times out, they are redirected to a DM session timeout screen to inform the user that their session has timed out.

DM-874:   Allow Spaces and Other Characters to be Preserved When Downloading Files from the DM

The DM outputs filtered file names in URLs. Previously, A-Z, a-z, 0-9, underscore, dash, period, and dollar sign were preserved while all other file name characters were changed to underscores to deal with issues with Internet Explorer (IE prior to Edge). Now that IE is no longer supported, this behavior has been changed. Now any characters that used to be substituted with underscores are converted to UTF-8 encoded characters so that virtually any filename character will be preserved on fetching.

DM-875: **Remove the FixForIE Parameter on DM Fetches Now That IE is No Longer Support by Microsoft**

Now that IE is no longer supported by Microsoft, the FixForIE parameter that was added to every fetch URL on the DM has been removed. The parameter takes up unnecessary extra storage, processing, and network traffic for no reason. The parameter is still allowed to support old URLs that are hardcoded in documents or web sites but is ignored when present by the fetch logic.

DM-876: **Support ETC Files with Special Characters on DM**

A request was received to improve the DM Admin ETC file handling to support file names with special characters. Previously, the DM ETC file servlets only supported file names with A-Z, a-z, 0-9, underscore, dash, period, and dollar sign. TechDoc only uses those characters but the customer had placed a backup copy of the file with other characters in it and could see the file but couldn't download or replace it.

DM-879: **If Abbreviation on Doc Type is Changed, Adjust System Properties When Necessary**

Previously, if the abbreviation of a Doc Type was modified and that Doc Type was assigned as the Metric Doc Type in System Properties, metrics would become disabled since the System Property no longer referenced a valid Doc Type. Modify Doc Type has been improved to fix the System Property if the Abbreviation changes so that the value stays valid. In addition, the ImapDocType System Property will also be fixed if necessary.

DM-880: **If Abbreviation on Doc Category is Changed, Adjust System Properties When Necessary**

Previously, if the abbreviation of a Doc Category was modified, at least one System Property might no longer reference a valid Doc Category that could disable IMAP support. Modify Doc Category has been improved to fix the System Property if the Abbreviation changes so that the value stays valid.

DM-882: **Improve Show Workflow Process Instance**

Previously, TechDoc was only support showing information for a few of the element types and only a few pieces of information. Now, all elements provide information when appropriate. Even sequence flow connectors provide details about themselves. In addition, if an instance is still running,

the picture detailing where the process is in the flow and the process variables are updated live without the need for the user to manually refresh the screen. Also, a dashed green box is drawn around the currently executing element or if an element fails to execute and stalls the process, a solid red box is drawn around it to indicate where the process failed.

DM-883:   Improve Workflow Process Instance Error Handling

In a prior version, support for modifying workflow process variables was added to help fix issues that might arise in a process. While this ability helped a great deal, there was still the issue of when a job failed during execution. This has been completely reworked to store the execution error in a process variable and allow the process to sit idle until the user decides how to fix it and let it proceed or to stop the process. Now, no matter what, a process should be able to be assisted as needed and guided to completion.

DM-884:   Improve History When Remote Users Vote

When a remote user voted on a review, just the username was recorded in the username field. For easier validation, the authenticator/username will be recorded as the username in the history record when appropriate. That prevents the need to click to the review to see the voter there with the full authenticator/username. The username field in the history record had to be increased, so that this potentially larger value would fit in the history record.

DM-888:   Improve Performance of Verify Integrity on the Associate Access Table

While working on DM-887, it was noticed that Verify Integrity returns a lot of records when analyzing the Associate Access table unnecessarily. The logic has been optimized to only return records with problems like other tables processed by Verify Integrity. This reduces CPU, memory, and network traffic between the DM and its database.

DM-890:   Update TechDoc Installer to Require Windows Server 2016 or newer

The TechDoc 11.1 Installer has been updated to require Windows Server 2016 or newer. TechDoc 11 supported Windows Server 2012 R2 or newer but since that version is now end of life, the new installer won't allow it.

DM-891:   Update tdsql to Require SQL Server 2016 or Newer.

The tdsql 11.1 utility has been updated to require SQL Server 2016 or newer. In TechDoc 11, it supported SQL Server 2014 or newer but since that version is now end of life, the new utility won't support it. Changes were also made to fully support the latest version of SQL Server now available.

DM-892:   Add Digital Signatures to Forms

Support for multiple types of Digital Signatures has been added to forms; including text signatures, interactively signed signatures, and uploaded signatures. In addition to the signature itself, the date/time and the IP address of the signer are saved. Also, information is stored to show which fields on the form were present at the time of signing and validation of whether any of that data has changed since the signing was performed. The signature record also provides additional validation that the signature, date/time, and IP address have not been altered since the signing was performed.

DM-893:   Improve File Upload Handling on the DM

The DM file upload internal mechanism has been completely reworked to support uploading more than one file so that workflow and forms can upload more than one file (or signature) at a time.

Previously on a page that uploads one or more files and the user pressed Previous or Cancel, the browser would still upload the file(s) as part of the operation. The Previous and Cancel buttons have been changed to clear any file upload fields prior to submitting the page so that files aren't unnecessarily uploaded.

Previously, TechDoc could create zero-length files during the upload process that are later complained about. TechDoc cannot support zero-length files due to browsers shortcomings. For example, there is no way to determine if the file was truly a zero-length file or if the file was just a non-existent file or if the user just didn't have read access to the file. Now, zero length files are detected and handled earlier in the process to avoid unnecessary overhead on the DM.

DM-894:   Rename DM's TechDoc Tomcat Service to Avoid Collisions

An Admin had problems with another product that also used the generic service name Tomcat for their product. To avoid this issue going forward, the Tomcat service that the TechDoc DM installs is called TechDocTomcat.

TechDoc already uses non-default port numbers so this change will prevent collisions with other products that rely on the defaults that Tomcat ships with.

DM-895:   **Allow Java Max Memory to Be Set So That It Is Not Recalculated During DM Upgrades**

We received a request to be able to preserve the max amount of memory that the DM's Java virtual machine can use across upgrades. The setting tomcatMaxMemoryMB=X where X is the max memory in megabytes that the JVM is allowed to grow. For example, tomcatMaxMemoryMB=4096 means that the max memory should be 4GB. The setting should be placed under the section [td] in the TechDoc\etc\td.ini file. Without the setting, the TechDoc 11.1 and higher installer/upgrader will still calculate what it deems a reasonable max for the max memory just like older versions always have.

Note that DM-896 updates the ConfigTechDoc utility so that an Admin can easily change the JVM max memory setting enabled by this issue on the DM.

DM-896:   **Update ConfigTechDoc to Support Setting the JVM Max Memory**

A request was made to support making it easy to adjust the max memory that the JVM is allowed to use. Previously, a registry change was required and repeated after each TechDoc upgrade. With this change, an Admin can run the ConfigTechDoc utility and specify the allowed JVM Max Memory. The value is saved in the registry and the td.ini where it will be retained across upgrades of TechDoc. Note that a restart of the TechDoc Tomcat service is still required to apply the change to the service if it is already up and running.

DM-897:   **Remove Unnecessary Index from a Workflow Table**

A customer reported a duplicate index on a Workflow-related table. The table ACT_PROCDEF_INFO has 2 indexes on the same column. One is created as a unique constraint and the other was a simple index. As a result, the second index is completely unnecessary and has been removed in TechDoc 11.1.

DM-899:   **Increase the DM's Value Column in the User Properties Table**

The Value column in the DM's User Properties table is only 128 characters long, which is too small to meet the needs of the Forms Editor. As a result,

the column has been changed to accommodate much larger values. It is variable length so small values still won't take up much database space.

DM-900:   Improved PDF Support

TechDoc PDF support has been improved for newer versions of the PDF File Specification up to and including PDF 2.0. This includes support for newer PDF encryption methods, improved accessibility, improved color accuracy, addressing ambiguities in various algorithm descriptions that resulted in differences between viewers, and rich media support (PRC - a popular 3D modeling language). Note that PRC support is not complete. However, what is supported so far has been included in this release. PRC support should be completed in the next release of TechDoc.

DM-901:   Address Workflow Database Connection Recovery

Windows Updates and other external events can cause connections in the Workflow Connection Pool to become unusable. Previously, this could lead to a large number of errors being generated until the TechDoc Tomcat service was restarted. Workflow currently uses something called MyBatis to interface with the database. We have implemented what's called connection pinging in MyBatis. After testing, it seems that worst case, a single alert will be sent out when a disruption occurs and then MyBatis will recover provided that the database outage was temporary. If the outage persists, alerts will still be sent but as soon as the database outage recovers, so will the Workflow database and the alerts will stop. In the future, we plan to remove MyBatis and use the normal TechDoc database methods instead.

DM-902:   Update URL Percent Encoding/Decoding on DM to Handle UNICODE Characters

Percent-encoded characters (i.e. %3A to represent a colon) on the DM did not support characters greater than ASCII 127 so higher UNICODE characters were not supported. TechDoc doesn't need them for itself. Recently, a call was made to a non-TechDoc web service that returned encoded higher UNICODE characters and the call failed. To enable this to work, the DM has been modified to support the encoding and decoding of those higher valued characters too.

DM-906: **Make SAML Authenticator More Robust When IDP Metadata File Deleted**

If the IDP metadata file has been deleted from the TechDoc etc folder, the SAML authenticator has been improved to detect the issue and automatically restore it from the IDP if the metadata URL has been specified on the SAML Authenticator.

DM-907: **Add REST Methods for Getting and Setting Session Settings** [11.1.1]

REST protocol methods have been added so that the TechDoc client can get and set the session settings that a web user can. The settings allow suppression of distribution, notification, and review emails and the document update priority for SM updates.

DM-909: **Unify and Clarify Log Ins, Log Outs, Session Timeouts** [11.1.1]

The logging and history needed to be unified and clearer for log ins, log outs, and session timeouts. The log entries and history records were worded somewhat differently between web, REST, and SOAP sessions.

DM-910: **Add a Fetch Link to Review Release Document Emails** [11.1.1]

It came to our attention that when users receive email about a document being released, there was no fetch link in the email. The first link in the email is now a URL to fetch the specific revision of the document that was just released.

DM-915: **Set DM Java to Use Windows Local Machine CA Certs** [11.1.1]

The DM's Java loads its root certificates from the Windows Local Machine's Trusted Root Certification Authorities (TRCA) store instead of the cacerts database included with Java. This allows the system admin to take advantage of certs that are installed at the machine level instead of having to keep manually installing them into the cacerts database. This will become much more important as certificate lifetimes continue to be shorten.

In addition, an Admin servlet has been added to show the current root certificates to allow an Admin to determine which root certificates are currently available to the DM.

DM-916: **Improve Workflow Scheduler to Better Handle Database Connections** [11.1.1]

Some Admins were complaining about receiving alerts tied to the Workflow Scheduler. The Workflow Engine currently uses a library called MyBatis to manage SQL differences and connections. Any time database connections used by the Workflow Engine become invalid (because the database goes offline, they've timed out, etc.), an alert will be generated. A new mechanism has been added to the Workflow Scheduler to purposefully look for invalidated connections before it begins to work. Since making these changes, we have been unable to reproduce the problem.

DM-917: **Add Support on DM for Attachments to Alerts and Emails** [11.1.2]

Support was added on the DM for file attachments to alerts and emails. Render 11 has a new feature to return a window list if render times out to help locate a possible window that might be causing the timeout.

DM-918: **Update the Render Task to Receive a Window List on Render Timeout** [11.1.2]

The Render Background Task has been updated to be able to receive a window list from the render machine running Render 11 if the render process times out. The window list can help locate a possible window that might be causing the render process to hang and timeout. If a timeout does occur and a window list is provided, the window list will be attached to the DM alert to make it easier to try to debug the problem.

DM-919: **Create/Modify User Should Disable/Enable Password Expires for Remote/Local Authenticator** [11.1.2]

A request was made that Create/Modify User should clear and disable Password Expires if the Authenticator is changed to a Remote Authenticator and that Create/Modify User should also restore the initial value and reenable Password Expires if the Authenticator is changed to the Local Authenticator.

FE-1: **Create the Forms Editor as DM Web App**

The DocuBrain Forms Editor has been created as a DM web-based application to allow users to create DocuBrain forms in a WYSIWYG fashion in their browser without the need to install anything on the client computer. The user will be able to create, place, move, resize, and delete all field types

allowed by the DocuBrain forms solution. Precision placement and styling allow the user to duplicate most existing forms so that they are nearly indistinguishable from each other.

SM-186:   **Update SM SQL Server JDBC Driver to 12.6**

The Microsoft SQL Server JDBC driver used by the SM has been updated from 12.2 to 12.6 in order to gain performance and reliability as well as better support for Azure and newer SQL Server versions.

SM-187:   **Add Session Timeout Warning and Logout to the SM**

A session timeout warning has been added to the SM and allows the user to optionally extend the session by clicking on the warning dialog. If the user does not acknowledge it and the session times out, they are redirected to a SM session timeout screen to inform the user that their session has timed out.

SM-188:   **Allow Spaces and Other Characters to be Preserved When Downloading Files from the SM**

The SM outputs filtered file names in URLs. Previously, A-Z, a-z, 0-9, underscore, dash, period, and dollar sign were preserved while all other file name characters were changed to underscores to deal with issues with Internet Explorer (IE prior to Edge). Now that IE is no longer supported, this behavior has been changed. Now any characters that used to be substituted with underscores are converted to UTF-8 encoded characters so that virtually any filename character will be preserved on fetching.

SM-189:   **Remove the FixForIE Parameter on SM Fetches Now That IE is No Longer Support by Microsoft**

Now that IE is no longer supported by Microsoft, the FixForIE parameter that was added to every fetch URL on the SM has been removed. The parameter takes up unnecessary extra storage, processing, and network traffic for no reason. The parameter is still allowed to support old URLs that are hardcoded in documents or web sites but is ignored when present by the fetch logic.

SM-190: **Support ETC Files with Special Characters on SM**

A request was received to improve the DM Admin ETC file handling to support file names with special characters. The SM also has the same issue so the comparable changes have been made to the SM as well. Previously, the SM ETC file servlets only supported file names with A-Z, a-z, 0-9, underscore, dash, period, and dollar sign. TechDoc only uses those characters but the customer had placed a backup copy of the file with other characters in it on the DM and could see the file but couldn't download or replace it.

SM-191: **Record History for Replacing an ETC File on the SM**

While working on SM-190, it was observed that the SM history didn't log replaced etc files like the DM does. It does log the replacement in the TechDoc log file but it didn't save it to history. A history record is now generated just like the DM does.

SM-194: **Update Lucene to the Latest Version for TechDoc 11.1**

Because everything on an SM should be reindexed because of going to Java 17, Lucene has been updated to version 9.12.1. Version 10 is out but it requires Java 21 and we are not able to jump to Java 21 because of other libraries that TechDoc uses. In the past, we had considered updating Lucene from 7 to 8. However, there was a big performance hit on indexing speeds and we didn't want to slow search indexing down that much. During changes to Lucene 9.x, they finally addressed the slowdowns and now we feel comfortable moving to Lucene 9.12.1, which is currently the latest version in the 9.x line.

SM-195: **Improve File Upload Handling on the SM**

Several improvements needed to be made to file upload handling on the SM. Most of the work was done for the DM under DM-893. However, the shared changed also impacted the SM so the SM has been modified to take advantage of all the improvements done in DM-893.

SM-196: **Rename SM's TechDoc Tomcat Service to Avoid Collisions**

An Admin had problems with another product that also used the generic service name Tomcat for their product. To avoid this issue going forward, the Tomcat service that the TechDoc SM installs is called TechDocTomcat.

TechDoc already uses non-default port numbers so this change will prevent collisions with other products that rely on the defaults that Tomcat ships with.

SM-197: **Allow Java Max Memory to Be Set So That It Is Not Recalculated During SM Upgrades**

We received a request to be able to preserve the max amount of memory that the DM's Java virtual machine can use across upgrades. Since the SM could be similarly impacted, the changes have been made to the SM as well. The setting tomcatMaxMemoryMB=X where X is the max memory in megabytes that the JVM is allowed to grow. For example, tomcatMaxMemoryMB=4096 means that the max memory should be 4GB. The setting should be placed under the section [td] in the TechDoc\etc\td.ini file. Without the setting, the TechDoc 11.1 and higher installer/upgrader will still calculate what it deems a reasonable max for the max memory just like older versions always have.

Note that DM-896 updates the ConfigTechDoc utility so that an Admin can easily change the JVM max memory setting enabled by this issue on the DM. The same ConfigTechDoc utility is also provided with an SM-only install so those improvements apply to the SM as well.

SM-198: **Add Regression Tests for New Functionalities of the SM**

As a part of updating the regression tester to use WebDriver in DM-857, we added some new functionality to allow us to identify other areas of the SM that were not currently covered by the existing regression test suite. Using this information, we were able to identify and add regression tests for everything else that could be meaningfully tested.

SM-199: **Increase the SM's Value Column in the User Properties Table**

The Value column in the DM's User Properties table has been increased for supporting the new Forms Editor. Even though there isn't a specific need to, the SM's table will be changed as well. Whenever possible, we try to keep

corresponding tables between the two systems similar as it leads to less confusion and easier maintenance.

SM-200: **Update URL Percent Encoding/Decoding on SM to Handle UNICODE Characters**

Percent-encoded characters (i.e. %3A to represent a colon) on the SM did not support characters greater than ASCII 127 so higher UNICODE characters were not supported. TechDoc doesn't need them for itself. Recently, a call was made on a DM to a non-TechDoc web service that returned encoded higher UNICODE characters and the call failed. To enable this to work, the DM has been modified to support the encoding and decoding of those higher value characters too. At some point, the SM may need this so the changes have been made to the SM code as well.

SM-205: **Add Alerts to SM When Reindexing Begins and Ends**

The SM now sends alerts when the Indexer background task begins and ends so that Admins are aware that a rebuild is in process. Prior, the only way for an Admin to know if the reindex had started or was still running was to log into the SM and check the status of the Indexer background task. This is still a valid option but the email alert is a much more user-friendly way of letting Admins know what's going on with such an important event.

Because the index needs to be rebuilt as part of an SM upgrade from TechDoc 11 to 11.1, SM Admins who are signed up for alerts will automatically receive these alerts to remind them that the rebuild has started and when it completes.

SM-206: **Update SM Chart.js Library to Newest Version**

The Chart.js library has been updated to the newest version as there are many new features and performance improvements. The internal syntax has had major changes so significant changes had to be made to SM dashboard logic to make the update.

SM-210: **Set SM Java to Use Windows Local Machine CA Certs** [11.1.1]

The SM's Java loads its root certificates from the Windows Local Machine's Trusted Root Certification Authorities (TRCA) store instead of the cacerts database included with Java. This allows the system admin to take advantage of certs that are installed at the machine level instead of having

to keep manually installing them into the cacerts database. This will become much more important as certificate lifetimes continue to be shorten.

In addition, an Admin servlet has been added to show the current root certificates to allow an Admin to determine which root certificates are currently available to the SM.

SM-211:   Add Support on SM for Attachments to Alerts and Emails [11.1.2]

Support was added on the SM for file attachments to alerts and emails. There wasn't a specific need for an attachment on the SM yet, but the code base shared with the DM had to be changed to support this. It required that the SM code had to be adjusted too.