

## MEMORANDUM FROM EUGENE WON

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Via JRiver Media Center Interact Forum

TO: JRiver Management

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SUBJECT: **Population of Notes Tag with Meaningless Data; Suggested Improvements**

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This memorandum (1) discusses a serious and potentially costly bug in version 32 (v32) of JRiver Media Center (“MC”) and (2) requests your consideration of a few minor improvements to MC.

### Version 32 Bug: Population of Notes Tag with Meaningless Data

#### The Problem

MC populates an album’s Notes tag/field with a meaningless term. (Below, such a term is a “Term”; a tag is a “field”; a Notes tag is a “Field”; and “to infect” an album or track is to populate the Field of an album or track, respectively, with a Term. For the forms of Terms, *see* the heading “Infection Pattern.”)

An infection apparently occurs at the album level, *i.e.*, an album’s Field is populated with a Term, causing the Field of every track in the album to be populated with the Term, though it is possible that every track of an album could be populated with a Term, causing the album’s Field to be populated with the Term.<sup>1</sup>

#### Assumptions

I assume that the problem first appeared in v32 because I first discovered the problem while using v32. The problem may have occurred in prior versions, but I did not use versions 29

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<sup>1</sup>It seems less likely that MC would populate every the Field of every track of an album with the same Term and that the album's Field would thus contain the same Term, but I am only a beginner in music-player software.

to 31 and, though I used versions 23 to 28 and started populating tracks' Fields with version 28, I did not notice the problem under that version.

By accident one day while viewing the approximately 8,000 tracks (in 300 albums) in my MC library in Files view, I discovered that the Fields of over 1,000 tracks were populated with various Terms.

I also assume that the infection of albums occurred only once I started populating the Fields of tracks (beginning in the second half of 2023) and recurs only because I continue to populate or edit tracks' Fields.

However, a more troublesome possibility is that MC could infect albums even if no track's Field is populated or edited during a MC session. In that case, opening MC to listen to music or edit other fields of tracks could result in albums' infection. Over time, more and more albums may become infected.

### Infection Pattern

Based on my experience over approximately the last three months and 1,000 hours of populating tracks' Fields almost daily, typically 12 to 14 hours per day, I have observed the following infection pattern.

Each Term is of the form "x[Varies]," "x," "xx," "xxx," or "xxxx" (without the double quotes), where *x* is a variable that represents a lower case letter (or digit if the Term contains only one character). Initially, each Term was of the first form. Recently, that form rarely appears. Examples of Terms are a[Varies], 9, d, qq, ttt, ffff, where *x* = a, 9, d, q, t, or f, respectively.

Any album may be infected, whether or not any of its tracks' Fields are populated or edited, with one exception. If any Field of an album's tracks is populated or edited during a session, that album is not infected during the session. However, the album may be infected in a subsequent session if none of its tracks' Fields is populated or edited during the session.

There appears to be no pattern as to which albums will be infected during a session (except as noted in the preceding paragraph). The number of albums infected during a session ranges from one to three (out of 300 albums in the library).

The infection occurs intermittently. As I work almost daily populating tracks' Fields, on average an infection occurs once every three to four (daily) sessions.

### Potential for Loss of Valuable Data

Some of the tracks' Fields contain text consisting of thousands of characters. The highest number of characters is at least 15,000 (almost the number of characters, including spaces, in this memorandum), the number of characters for one track's Field. I have not counted the number of characters in every populated track's Field, hence, some tracks may contain more than that number.

I have expended considerable effort and an estimated 1,000 hours to gather, compile, and organize data and to compose text to populate the Fields of about 10–15% of the approximately 8,000 tracks in my library and to edit those Fields as I obtain additional information about other tracks. At that rate, I shall spend a total of between 6,700 and 10,000 hours over 20 to 30 months spending 12 to 14 hours per day to populate the 8,000 tracks' Fields in my library.

The potential data loss and cost in labor and time will increase by orders of magnitude if, as is my goal, I populate the field of every track in the library and of future tracks as the library continues to expand.

## Two Time-Consuming Remedial Measures

### Source-Target File Comparison and Daily Backup

At the end of each day's session, I use a file/folder-comparison program called ViceVersa Pro (by TGRMN Software) to compare the files in my library (on an internal drive) ("Source") with the files in a backup (external) drive ("Target"). This program allows me to see modified (more precisely, updated, in the sense of bearing a later timestamp), added, or deleted files in the library compared to the backup.

Since I use ViceVersa at the end of each day's session, I know on which albums and tracks I have worked (generally less than 50 tracks in only a handful of albums). Those albums (folders) that appear in ViceVersa with all of their tracks (files) inexplicably updated and on which I have not worked are easily identified. When I reopen MC to examine those tracks, I confirm that they contain Terms.

The infected album's Field is emptied; MC is closed; the updated files are deleted; the backup copies containing valid information are copied into the album's folder on the internal drive, Source and Target are re-compared by ViceVersa, and the backup is executed. Since the infected files are replaced by the backup copies and files in Target that are identical to those in Source are unchanged, only files whose Fields were intentionally modified overwrite existing backup files.<sup>2</sup>

Using ViceVersa in the above-described manner generally prevents overwriting a file containing valid data with a file containing a Term. If, as occasionally happens, I inadvertently overlook (fail to identify) an infected album and overwrite the backup files for the album's tracks that contain valid Field information with the infected files, I am able to recover from the error

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<sup>2</sup>If the infected album's Field is not emptied, then apparently MC retains the information somewhere in its database for the album. Hence, even if the infected files are deleted and the uninfected backup copies replace them, MC apparently uses the information in the album's Field to populate the Field of every formerly uninfected track with the same Term in the album's Field. Consequently the timestamp of the uninfected files is updated to the time when the population occurred. To prevent this outcome, I empty the album's Field first. Once the infected files are replaced with the uninfected files, MC will then show the album's Field as empty if every track's Field is empty or display the value "[Varies]" (without the double quotes) if the tracks' Fields contain varying information (which could be no information for some but not all tracks).

because I have ViceVersa save in an archive folder overwritten (or deleted) backed-up files for up to 360 days from the date and time they are overwritten (or deleted).

The above procedure must be diligently applied daily. Otherwise, I may not recall which albums were populated with valid information and which albums were not (and, hence, are infected).

This measure is time-consuming, even if not nearly as time-consuming as the second remedial measure. In addition, I apply the measure at the conclusion of each MC session, even if no track's Field is populated or edited, out of an abundance of caution in case an album is infected during the session or I populated or edited a track's Field but do not recall doing so. In this way, since the number of isolated tracks or albums all of whose tracks are updated will be relatively small, suspect tracks or albums can be examined in MC to determine which tracks, if any, are infected.

### Use of Word for Composing and Saving Field Data Entered in MC

Once I discovered the more than 1,000 tracks that were infected, though no data loss had occurred at that time because I had just begun to populate the Fields of tracks, I realized the potential for data loss. Thus, I copied the data in the Fields of tracks I populated into a Word document.

Once the document was created, I soon realized that it was much easier to compose and organize the data for a track's Field in Word. As a result, the relatively brief data (up to about 300 characters) initially entered was soon replaced by more elaborate data with headings in a multi-level outline and automatic (legal-style) numbering of the headings to organize and present the data.<sup>3</sup>

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<sup>3</sup>The more elaborate data in a track's Field may contain or refer to one or more of the following categories of information:

(1) if the track is part of a larger work represented by the album (e.g., a stage or motion-picture musical, a concert, a religious ceremony, or a work of classical music such as a symphony or opera): when the work was written, who wrote the work, how was the work initially conceived (e.g., the motion-picture musical *the King and I* was adapted from the stage musical of the same name, which was in turn adapted from Margaret Landon's novel *Anna and the King of Siam* (1944); the novel was in turned based on and was a fictionalized version of Anna Leonowens' own account in her memoirs, beginning with *The English Governess at the Siamese Court* (1870), as schoolteacher to King Mongkut's children in the early to mid-1860s);

(2) the origin of the number represented by a track: lyricist, composer, date written (or date composed followed later by date lyrics were written or conversely, the date a poem or hymn was written followed later by the addition of a tune under a separate title), date published, for whom the number was written (e.g., "(You Make Me Feel Like) A Natural Woman," written in 1967 by Carole King as composer and Geoffrey Goffin as lyricist for Aretha Franklin during her first year at Atlantic Records, and the story of how King came to be commissioned to compose the song);

(3) the lyrics: in some cases the lyrics in a foreign language and then its translation into English or its substitution with different lyrics in English (e.g., the English lyrics of *My Way* written by Paul Anka in 1968

With this much more elaborate data in the Field involving much more time gathering and organizing the information:

(1) Word as an alternative vehicle for preserving, reading, or presenting the data in a form independent of the track's Field and file (which could be corrupted) and MC as a means of reading the data; and

(2) Word as a powerful tool for editing and updating the data, *e.g.*, renumbering the headings as some are moved, deleted, or inserted becomes more important.

Word provides peace of mind and a more efficient method of editing the data than trying to do so in MC, especially if renumbering is involved, or for copying the data from MC to another music player if for some reason the other music player does not recognize or read the data in the Field but provides an alternative means particular to that player for entering and saving the data, just as the star rating of a track in MC is not a field but is somehow saved in MC for each track.<sup>4</sup>

In addition, a Word document (or a PDF document converted from Word) is more readable than the text in MC's pop-up window, as Word allows for character and paragraph formatting, multi-level outlining and numbering, levels of indentation, right or left indentation,

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with Frank Sinatra in mind using the melody of a French song with unrelated French lyrics); in other cases, the evolution of the lyrics over time (as in the case of folk songs or the case of "Ain't No Mountain High Enough," initially co-written by Nickolas Ashford and Valerie Simpson as a romantic 2:28 song for Marvin Gaye and Tammi Terrell and then transformed by Ashford and Simpson into a 6:20 gospel-style song with extended spoken passages for Diana Ross);

(4) the lyrics' meaning;

(5) the original and cover versions of a song;

(6) the popular reception of the recording by an artist as measured by a Billboard chart (*e.g.*, the song's highest ranking on the Billboard Hot 100 chart or the number of weeks at which the song was number 1 or in the Top 10 on that chart);

(7) the critical reception of the recording;

(8) the recognition of the song as represented, *e.g.*, by its inclusion and position in the The Recording Industry Association of America: Top 365 Songs of the Twentieth Century; its inclusion and position in the American Film Institute's list of top 100 songs in American cinema of the 20th century, its inclusion in the Great American Songbook, its reception of a Grammy award, or its induction into the Library of Congress National Recording Registry; and

(9) a list of sources/references used including URLs if applicable (unless the main site is well known, *e.g.*, in the case of Wikipedia, it suffices to state the article's title as most people would then know how to find the article) in case one wishes to consult those sources for additional information or information to clarify an ambiguity in or answer a question prompted by the text.

<sup>4</sup>Here, my elementary knowledge of music players may be evident, as I do not know if any music player other than MC will read a track's Field.

variation in fonts, font sizes, font styles, and font attributes (color, underlining, highlighting, strike-through, superscripts and subscripts, hidden text, *etc.*), and tables.

Tables are especially helpful when one wishes to compare the original lyrics in a language other than English with their English translation or to compare the lyrics as sung by one artist (*e.g.*, Bobby Darin's rendition of Mack the Knife) with the lyrics as sung by another artist (*e.g.*, Ella Fitzgerald's rendition of the song at her 1960 Berlin concert when she forgot the lyrics midway through the song and improvised by free-styling, scat-singing, mimicking Louis Armstrong, and quoting or referencing other songs).

In MC's popup window, all text is left justified. No indentation (left indentation or left-and-right indentation), change of font, font style, or font attribute is permitted and a two-column table in Word must be transposed into a two-row table, where the text in one column is followed by the text of another. This makes comparing the lyrics between languages or between artists much more difficult.

Still, it is useful to save the information in a track's Field, as one might not have access to the Word or PDF document at the time one is playing a track and, should the Word document become corrupted, the raw data can be retrieved from a Field, as daunting as the task would be to construct a new Word document from the raw data.

One benefit of learning that albums are infected when using MC is that I embraced composing and saving a Field's text in Word and benefited from doing so. Hence, even if the problem is cured, I intend to continue using Word.

The benefit I seek from having the problem cured is that I would be relieved of having to compare and backup library files at the end of each session (though daily backup of one's documents or media files is prudent).

## Suggested Minor Improvements to MC

Please allow me to suggest a few minor improvements to MC. I understand that these improvements may not be implemented because MC's management and developers may wish to implement other, more important improvements to keep MC competitive.

### Customization of Displayed Fields

In the Album and Artists views, the user is not permitted to customize the displayed fields and save the customization. It would be helpful if the user could do so.

## Templates for Customization of Displayed Fields in Views and Playlists

I generally use the same customized set of fields, field order, and field width in every view of tracks.<sup>5</sup> It would be helpful if one could create and save a template and apply that template to each view. Currently, one must customize the displayed fields in each view that allows customization.

In addition, I generally use the same customized set of fields, field order, and field width in every playlist group and playlist. The fields, field order, and field widths are the same as used for the display of tracks in different views except that the Playlists field immediately follows the Seq field. It would be helpful if one could create and save a playlist-group template and playlist template and apply the appropriate template to each newly created playlist group or playlist.<sup>6</sup>

### Setting a Field's Width Using Numbers

As far as I know, one can set a field's width only by using the mouse, not by choosing a number. If I am incorrect, I would appreciate advice on how to set the width using a number.

Using a number would be helpful. In Microsoft Outlook, for example, Journal records' fields can be chosen and sorted and their widths can be specified using a menu that allows input of a number for each field displayed. The fields are displayed to the right of the Navigation Pane (on the left side of the screen).

I keep records of the number I choose for each field and I sum the numbers to obtain the total width of all fields given the width of the Navigation Pane and the resolution of the monitor used. This record-keeping is helpful when displaying Outlook's Journal records using monitors with different resolutions, *e.g.*, when changing the external monitor connected to a desktop or laptop PC or viewing the records on a laptop PC's internal display instead of an external one. If I know that a monitor of the same resolution used for my desktop PC is used as an external monitor for my laptop PC, I can apply the numbers used for the desktop to the laptop. If the fields do not fit within the screen or they do not fill the screen, then I adjust the width of the Navigation Pane slightly so that the fields exactly fit the screen, after taking into account the width of the vertical scroll bar.

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<sup>5</sup>The fields in order from left to right are Disc #, Track #, Name, Artist, Composer, Album Artist (Auto), Album, Rating, Genre, Date, Duration, Playlists, Notes, File Type, Sample Rate, Bit Depth, Channels, Bitrate, Filename (name), and Filename (path). Sample Rate is the last visible field in each view. The fields following it are viewed by using the horizontal scroll bar.

<sup>6</sup>My workaround is to create a playlist group "0 Playlist template," which appears as the first playlist group in my list of playlist groups because every other group begins with a letter. I use this playlist group to create each new playlist group or subgroup by copying the former to Playlists or to an existing playlist group, respectively. Under the above-named group, I created a playlist, "Playlist template," which I use to create a new playlist under any group or subgroup by copying the playlist. It appears as the first playlist in any group because its first character is a space and every playlist's first character is alphanumeric. These "templates" insure that the fields, field order, and field width displayed in a playlist group or playlist will be uniform for every group or playlist for tracks in my library.

In MC, the vertical scroll bar has a width, though it is much narrower than the default width of a vertical scroll bar of Windows Explorer on a Windows PC. Nonetheless, the MC vertical scroll bar's width must be taken into account. If one sets the fields' widths when the scroll bar does not appear, then, when it does, the right-most field (Sample Rate, as indicated in fn. 5 (p. 7)) will be visible only partially.

Having a menu to choose the fields' widths by numbers as in Outlook would be helpful, as one could determine the total width of the visible fields given the width of MC's navigation pane. In addition, if a template is not available, those numbers could be applied to customize the display of tracks in different views or in playlists. Again, when switching between monitors of different resolutions or between an external or internal display of a laptop PC, the numbers provide a convenient starting point for setting the widths of the displayed fields and for determining the total width available for all displayed fields given the navigation pane's width.

If one realizes that the total width for one display is smaller than that of another display and the total width of that display is known given the width of the navigation pane, one can calculate the appropriate amount by which to reduce the width of some or all of the fields for the smaller display and consider adjusting the width of the navigation pane in the display to increase the width available for the fields.

Using a mouse instead to set the widths involves much more experimentation and time.

## Conclusion

I appreciate your considering:

- (1) how MC may be fixed to prevent the population of albums' Fields with Terms and consequent overwriting of valuable information in the tracks' Fields; and
- (2) the above-suggested minor improvements to MC.

Considering the infection rate per hour of MC's use for the number of albums and tracks in my library, I understand that replicating this problem may take many hours. If I spend 14 hours per session and the infection occurs in two albums after four sessions, the infection rate is one album for each 28 hours.