# Codonics SLS Variable Length Container IDs

### **Overview**

Version 1.5.0 software for Codonics Safe Label System<sup>TM</sup> (SLS) supports scanning and reading of variable-length Container IDs. For example, SLS 500<sup>TM</sup> will now scan a drug container that uses a Data Matrix barcode with a 10-digit Container ID and a completely different container that uses an EAN-13 barcode with a 13-digit Container ID.

Previous releases supported only one predefined Container ID (that is, 10-digit) in a formulary. In version 1.5.0, Container IDs can be from 1 to 18 digits in length within a specific symbology (e.g., Data Matrix) or across symbologies (e.g., a 10-digit Container ID Data Matrix and a 13-digit EAN-13). This allows SLS to support scanning drug containers and printing syringe labels in sites that:

- Source drugs from multiple countries that have different standards for defining Container IDs.
- Use a combination of pre-labeled drugs and over-labeled drugs that have different length Container IDs and different symbologies.
- Prepare their own medications (compounding) and label the compounded drugs in the pharmacy with hospitalunique pharmacy ID codes as well as use prepared medications in vials and ampoules.

NOTE: Container IDs greater than 15 characters are not guaranteed to fit in the standard syringe barcode, depending on the format of the data they contain. However, if the data is mostly numeric or follows a welldefined pattern, then it is likely to fit. Otherwise, another field from the syringe barcode has to be removed to accommodate the long Container ID. In those cases where the Container ID is greater than 15 and less than 18 characters and does not fit the standard numeric or well defined pattern, a Custom Barcode Definition could be created and added to the Safe Label System<sup>™</sup> (SLS) Administration Tool (AT). This definition is part of the configuration package, and applies to all drugs in the formulary of a 500i on which such a configuration has been applied. Contact Codonics for further instructions.

# Barcode Length and Container ID Length

The length of a barcode is not necessarily the same as the length of the Container ID that it contains. For example, a Codonics Container Labeling System<sup>™</sup> (CLS) barcode can contain the Container ID as well as expiration and lot information. The barcode length can be 20 or more characters; however, the Container ID portion of the barcode might only be 10 or 12 characters.

In version 1.5.0, barcode parsing rules can accommodate printing barcodes that include the Container ID and additional information. The barcode has a practical limit of 35 characters.

# **Configuring Container ID Lengths**

To configure a range of Container ID lengths to be supported:

- 1. In the Configuration Manager section of the AT, go to the **System** tab.
- 2. In the Primary Barcode Definition list, select option 4.

	💼 Formulary 🏟 Configuration 📇 Devices Registration Provided Stream	Administrator   Los.Out
Safety	Create Paciage	
Security	Syringe	
System	Drug Not Found Mode Switch: Blank	
Custom Labels	SLS Label Barcodes Primary Barcode DeInition Li Alpharrametic Container ID), Experiation Naternino, Administer Model  Load Custom Barcode	
	Auslian Barcode - No Barcode - No Write-In Area	

Primary Barcode Definition option 4

- 3. Modify other configuration settings as needed and create the configuration package. For more information about the other configuration settings and how to create a configuration package, refer to the SLS Administration Tool User's Manual.
- 4. Go to the Formulary tab.
- 5. Click the Configure Locale button at the bottom left corner of the Formulary tab.

The Configure Localization dialog box displays.

6. In the Container ID Length Minimum and Maximum lists, enter the minimum and maximum Container ID lengths to be supported. To specify a single length, select the same value in both lists.



Configure Localization	
Localization Pack	
Active Localization Pack: en-US-1 💌	
+ Add New Localization Pack	
Label Template Pack	
Active Label Template Pack: STD-1	
ASA/ASTM/ISO MEDIUM FORMAT	UNARNO         Dyname           (VMARNO)         Exercise           Prepared:         (bala Time)           By:         (UserD)           Expires:         (Data Time)
+ Add New Label Template Pack	
	Label Size : 22mm x 60mm Template Version: v02
General	
Date Display Format: MM/dd/yyyy HH:mm 👻	
Database Mode: Other 💙	
CID Length: Minimum: 3 💌 Maximum: 13 💌	
Barcode Settings	
✓ Edit Barcode Parsing Settings	
X Cancel	✓ Save

CID Length Minimum and Maximum lists

**NOTE:** SLS barcode parsing rules will enforce the specified minimum and maximum Container ID lengths.

7. Click the Edit Barcode Parsing Settings button.

onfigure Localization	
Localization Pack	
Active Localization Pack: en-US-1 💌	
+ Add New Localization Pack	
Label Template Pack	
Active Label Template Pack: STD-1 💌	(Decollege) Kars
ASA/ASTM/ISO MEDIUM FORMAT	(VRARINKO) Prepareć (Data Time) Expires: (Data Time) Expires: (Data Time)
+ Add New Label Template Pack	
	Label Size : 22mm x 60mm Template Version: v02
Database Mode: Other 💌 CID Length: Minimum: 3 💌 Maximum: 13 💌	
Barcode Settings	
✓ Edit Barcode Parsing Settings	
< Cancel	✓ Save
Edit Barcode Parsi Settings button	ng

The Configure Barcode Parsing dialog box displays.

8. In the Preset list, select Custom.

	Select <b>Custom</b>				
Configur	e Barcode Parsing				
Preset:	ustom	+ Add New Rule.			
Priority	Symbology	Rule	Check Digit	Actions	

9. Click the Add New Rule button.

		Add Nev	v Rule butto	on
Configur	e Barcode Parsing			
Preset:	Symbology	+ Add New Rule	Check Digit	Actions

The New Barcode Parsing Rule dialog box displays.

Original	
Barcode	Scan Container Barcode
Data:	12345678901234567890123456789012345
	Enter Match Rule
Match:	12345678901234567890123456789012345
	Enter Transfer Rule
Transfer:	12345678901234567890123456789012345
Check Digit	No Check Digit
Container ID Result:	)
Symbology:	Select Symbology
Match Rul	e Guide
Match Rul #:	e Guide Match any number character
Match Rul #: @:	e Guide Match any number character Match any alphabetical character
Match Rul #: @: ?:	e Guide Match any number character Match any alphabetical character Match any character
Match Rul #: @: ?: Other:	e Guide Match any number character Match any alphabetical character Match any character Match specific character
- Match Rul #: @: ?: Other: - Transfer I	e Guide Match any number character Match any alphabetical character Match any character Match specific character Rule Guide
Match Rul #: @: ?: Other: Transfer I +: Trans	e Guide Match any number character Match any alphabetical character Match any character Match specific character Rule Guide fer character to Container ID
- Match Rul #: @: ?: Other: - Transfer I +: Trans	e Guide Match any number character Match any alphabetical character Match any character Match specific character Rule Guide fer character to Container ID t transfer character to Container ID
Match Rul #: @: ?: Other: Transfer I +: Trans -: Do no	e Guide Match any number character Match any alphabetical character Match any character Match specific character Rule Guide fer character to Container ID t transfer character to Container ID
Match Rul #: @: ?: Other: Transfer I +: Trans -: Do no	e Guide Match any number character Match any alphabetical character Match any character Match specific character Rule Guide fer character to Container ID t transfer character to Container ID

10. Enter the parsing rule parameters in the fields and lists.

For information about the parsing rule parameters, refer to the topics "Barcode Parsing Rules and Finding Matching Container IDs" and "Example Barcode Parsing Rules" earlier in this Technical Brief and to the Codonics SLS Administration Tool Localization Enhancements Technical Brief (Codonics Part Number 901-261-001).





11. When you are finished entering the parsing rule parameters, click the **Create** button to create the parsing rule.

The dialog box closes and the parsing rule is added to the list in the Configure Barcode Parsing dialog box. Next, you will test the barcode rule.

12. Click the Original Barcode Data field.

reset: 🕒	ustom	+ Add New Rule		
Number	Symbology	Rule	Check Digit	Actions
1	Data Matrix	010#############	No Check Digit	<ul> <li>×</li> </ul>
2	UPC-A, UPC-E, UPC-E1, EAN-8	= = # # # # # # # # # # # #	No Check Digit	<i>»</i> ×
3	Data Matrix	#@####	No Check Digit	×
4	Data Matrix	####-##-###-@	No Check Digit	×
				_
5	Data Matrix	***	No Check Digit	
- Test R	Data Matrix	***	No Check Digit	
Test Ri Original	Data Matrix ules Barcode Data:	***	No Check Digit	Clear
Test Ri Original Contain	Data Matrix ules Barcode Data: er ID Results: No results	***	No Check Digit	Clear
- <b>Test R</b> Original Contain	Ules Ules Ules Ules Ules Ules Ules Ules		No Check Digit	Clear
5 <b>Test R</b> Original Contain	Ules Barcode Data: er ID Results: No results	*** 	No Check Digit	Clear X Cle
- Test R Original Contain	Ules Barcode Data: er ID Results: No results		No Check Digit	Clear Clear

13. Scan the barcode.

The barcode contents are entered in the Original Barcode Data field.

14. Click the Test button.

lumber	Symbology	R	tule	Check Digit	Actions
	Data Matrix	0	010 <b>#############</b> ##	No Check Digit	×
!	UPC-A, UPC-E, UPC	C-E1, EAN-8#	******	No Check Digit	×
)	Data Matrix	Ħ	*@####	No Check Digit	×
J	Data Matrix	#	*###-##-###-@	No Check Digit	×
i	Data Matrix	*	*##	No Check Digit	
Test R	ules				
Test R	ules Barcode Data:	]d101040305	539053082	Test	Clear
Test R Original Contain	ules Barcode Data: er ID Results:	]d101040305 No results	539053082	Test	Clear
Test R Original Contain	ules Barcode Data: er ID Résults:	]d101040305 No results	539053082	Test	Clear

The parsing rules that match the barcode are listed in the Matching Rule field. The resulting Container IDs as rendered by the parsing rules are listed in the Container ID Result field.

Preset:	lustom	×	+ Add New Rule		
Number	Symbology		Rule	Check Digit	Actions
1	Data Matrix		010###############	No Check Digit	×
2	UPC-A, UPC-E, U	JPC-E1, EAN-8	#######################################	No Check Digit	<i>»</i> ×
3	Data Matrix		#@####	No Check Digit	×
4	Data Matrix		####-##-###-@	No Check Digit	×
5	Data Matrix		###	No Check Digit	
Test R	ules				
Test R	<b>ules</b> Barcode Data:	]d1010403	0539053082	Test	Clear
Test R Original Contain	ules Barcode Data: er ID Results:	]d1010403 4030539053	0539053082 3082 (Rule 1)	Test	Clear
<b>Test R</b> Original Contain	<b>ules</b> Barcode Data: er ID Results:	]d1010403 4030539053	0539053082 2082 (Rule 1)	Test	Clear
<b>Test R</b> Original Contain	ules Barcode Data: er ID Results:	]d1010403 403053905	0539053082 2082 (Rule 1)	Test	Clear X Cl
Test R Original Contain	ules I Barcode Data: ier ID Results:	]41010403	0539053082 2082 (Rule 1)	Test	Clear X Cl



15. When you are finished adding barcode parsing rules to support the variable length Container IDs that you will be using, create the formulary package and deploy the package to 500i devices. For more information about these tasks, refer to the SLS Administration Tool User's Manual.

# Barcode Parsing Rules and Variable-Length Container IDs

The following topics describe how barcode parsing rules are used to support variable-length Container IDs. For more information about creating and managing barcode parsing rules, refer to the Codonics SLS Administration Tool Localization Enhancements Technical Brief (Codonics Part Number 901-261-001).

#### Barcode Parsing Rules and Finding Matching Container IDs

In version 1.5.0, when parsing a scanned barcode during the Container ID matching process, the system uses a "Match All Rules" approach. This means that the system must compare an incoming barcode with all possible parsing rules. If there are multiple matches and thus multiple possible Container IDs, the system allows the user to choose which match is correct.

For example, let's say that the barcode parsing rules include the following two rules:

Rule 1:

Match = 01####	Transfer =++++	(Container ID = 4 digits)

Rule 2:

Match = ####### Transfer = ++++++ (Container ID = 6 digits)

With these rules, any 6-digit barcode that starts with **01** will match the first rule and will generate a 4-digit Container ID. However, there may be a barcode that starts with **01** that is a legitimate 6-digit barcode intended to match Rule 2.

So, using these sample rules, a barcode string of **012345** would match both rules and would generate two possible Container IDs:

- Container ID = 2345 (from Rule 1)
- ◆ Container ID = 012345 (from Rule 2)

On 500i, both Container IDs would be compared against the formulary. If there were more than one match, then the user would have to choose between the matches (similar to when there are multiple instances of a single Container ID in the formulary). However, if only one match is found, then it would be assumed to be correct and the user would not be prompted to make a choice.

#### **Example Barcode Parsing Rules**

The set of barcode parsing rules listed in the following Configure Barcode Parsing dialog box includes examples of rules for variable-length Container IDs.

umber	Symbology		Rule	Check Digit	Actions
	Data Matrix		010###############	No Check Digit	×
2	UPC-A, UPC-E, U	JPC-E1, EAN-8	##############	No Check Digit	<i>»</i> ×
3	Data Matrix		#@####	No Check Digit	/ ×
4	Data Matrix		####-##-###-@	No Check Digit	<i>»</i> ×
5	Data Matrix		###	No Check Digit	
5 Test Ri	Data Matrix		***	No Check Digit	
5 Test Ru Original	Data Matrix ules Barcode Data:		222	No Check Digit	Clear

The following example Edit Barcode Parsing Rule dialog box shows the details of the first rule in the list above. In this example, there is a prefix of **010** that identifies the matching barcode/rule, and then the following 13 characters comprise the Container ID. Therefore, the total barcode length is 16.





#### **Barcode Parsing Rules and Verification**

Because the barcode parsing rules determine how a scanned barcode is interpreted, and thus what its corresponding Container ID is, any changes to the rules might invalidate drugs that have already been verified in the AT. For example, a rule could be edited or superseded by another rule that would cause a particular container barcode to be interpreted differently, resulting in a different Container ID or in the drug not being found when the container is scanned.

As a result, when the barcode parsing rules are **modified** and/or **deleted**, drugs in the Master Drug Database (MDD) might need to be unverified and then re-verified. However, because re-verifying all drugs in the MDD can take substantial time and effort, the AT allows the user to choose to unverify all the drugs or not.

When a barcode parsing rule is **added**, the only possible effect on existing drugs would be another potential match based on the new rule. The "Match All Rules" behavior already accommodates this scenario, so adding a new barcode parsing rule does not require re-verifying drugs.

# **Technical Support**

If problems occur when using the AT, contact Codonics Technical Support.

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Website:	www.codonics.com

# *Get it all with just one call* 800.444.1198

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