LapSafe® LMS Integration

Introduction

The basic concept of the LapSafe® LMS integration is to allow the LapSafe® client application to use the Library Management System to authenticate users and to manage asset loans in the library. The integration can either lookup user in the LMS database only or perform both user lookup and asset loan management using the LMS. In the latter case the role of ONARKEN® is for reporting only. The LapSafe® installation is an asset loan system, automating the process of asset loan and return by using the LapSafe® client application to control user access and locker selection. The LapSafe® client application connects to the LapSafe® server in the cloud and maintains all the loan records, user permissions and provides user and system management functions.
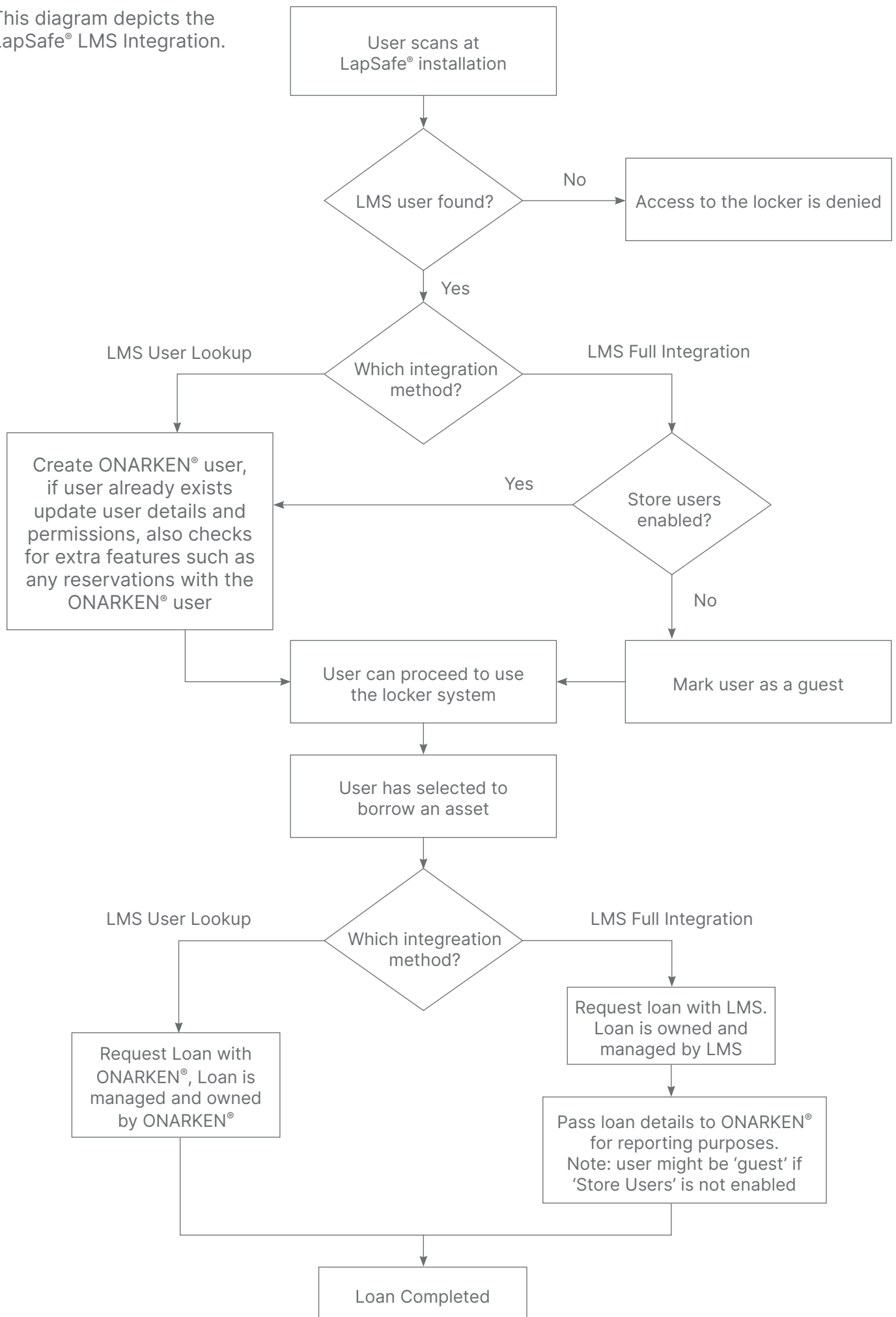
LapSafe® LMS Integration

The LapSafe® LMS integration allows the system administrator to specify a Library Management System to act as a user repository and to provide asset loan management. The integration can be user lookup only where the LMS is used as a user repository and a user lookup is performed when the user scans at the terminal. A full integration is also possible where the LMS is used for both user lookup and asset loan management. In this case the user is authenticated with the LMS, all loans and returns are handled by the LMS, and all assets are registered with the LMS.

LMS User Lookup Integration

LMS User Lookup integration uses the LMS as a user repository and performs a user lookup each time a user scans at the terminal. Once the user is identified in the LMS a corresponding Onarken user is created, or if the user already exists then the user details are updated. If the user is not found in LMS, access to the lockers is denied. This integration uses Onarken to manage loans and assets and all loans/returns are performed against the Onarken user. With this integration all assets exist only in Onarken and the LMS does not have any knowledge of the assets.

This diagram depicts the LapSafe® LMS Integration.

User scans at LapSafe® installation

LMS user found? — No → Access to the locker is denied

Yes

Which integration method?

LMS User Lookup

LMS Full Integration

Create ONARKEN® user, if user already exists update user details and permissions, also checks for extra features such as any reservations with the ONARKEN® user

Store users enabled? — Yes → Create ONARKEN® user, if user already exists update user details and permissions, also checks for extra features such as any reservations with the ONARKEN® user

No

Mark user as a guest

User can proceed to use the locker system

User has selected to borrow an asset

Which integreation method?

LMS User Lookup

LMS Full Integration

Request Loan with ONARKEN®, Loan is managed and owned by ONARKEN®

Request loan with LMS. Loan is owned and managed by LMS

Pass loan details to ONARKEN® for reporting purposes. Note: user might be 'guest' if 'Store Users' is not enabled

Loan Completed

LMS Full Integration

LMS Full integration uses the LMS for user lookup as well as loan and asset management. In this integration all the users are from the LMS. All the assets must exist in both the LMS and ONARKEN®. The loan and return process is handled by the LMS. The LMS keeps track of all the loan and return records.

This integration has an option called 'Store Users'. This gives the option to ONARKEN® to create a corresponding ONARKEN® user with each LMS user using the system. With this option enabled ONARKEN® will be able to record each transaction with a user, thus will be able to provide more meaningful reports. Without this option enabled, all transactions will be marked with the user as 'guest'. This option also allows extra server-side functionality such as reservation to work.

When a user scans at the terminal a user lookup is performed with the LMS to authenticate the user. Once the user is identified and Store Users enabled, a corresponding ONARKEN® user is created, or if the user already exists then the user details are updated. If the user is not found in LMS access to the lockers is denied. In this integration ONARKEN® keeps only the minimum loan related data for reporting purposes.

It is recommended that this 'Store Users' option is enabled, however this option may be disabled if you do not wish to store user information within ONARKEN®

It is worth noting that a user lookup is always performed at the LMS every time a user scans at the terminal. This means the LMS maintains control of the user and if the user is removed or blocked at the LMS the corresponding ONARKEN® user is automatically blocked and denied access.

LapSafe® LMS Integration Configuration

The series of pictures below depict the configuration options available under SIP2 LMS integration. The configuration screen allows you to specify which integration method to use, and in the case of LMS Full Integration whether 'Store Users' should be enabled.

The Permissions Mapping screen allows you to specify the user role and access group. All LMS users are given the same user role and access group.

The Connection Details screen allows you to specify the connection details to the LMS.

Under The Hood

The LapSafe® LMS integration uses the SIP2 protocol to interface with the library management system. SIP2 was published by 3M in 1993 and LapSafe® supports V2.0 of the protocol but specific features such as notifications are not supported.

SIP2 is a verbose protocol and information is transported in plain text. It does not mandate any security or encryption between client and server hence it is susceptible to the 'man in the middle' attack. LapSafe® offers the use of 'sTunnel' to create an encrypted and secure connection between the LapSafe® client and the LMS server.

The LapSafe® LMS integration mandates all assets in the LMS used for loaning must also be defined in ONARKEN®. This is required for reporting purposes and better classification. The LMS was designed to handle books and it does not provide any asset management functions. In ONARKEN®, the corresponding asset is assigned a category and allocated a charging characteristic. This allows for a more flexible classification of assets and allows the LapSafe® client to present a more intuitive UI for asset selection, providing a best-in-class UI experience.

The lack of notifications from the LMS makes it difficult to ascertain the location and availability of the assets. Very often an asset would be placed inside a locker and it is expected that the asset will become available, or asset might be marked as unavailable in LMS but ONARKEN® was never notified. To overcome these issues, with the use of SmartCharge technology, the LapSafe® client software interrogates the locker each time after the door is opened or closed to determine the presence of the asset. This indicates whether the asset was removed or returned to the locker and to confirm the door was securely closed. Any irregularities are reported to the server and the administrators are also informed by email.

This check is also performed on startup and any assets found in their lockers will have their availability confirmed with the LMS before it is made available for loan. Finally, during the borrow workflow, the availability of the chosen asset is checked again with the LMS to make sure it is available before it is released.

With the Full LMS integration it is important to remember that assets are defined in both the LMS and in ONARKEN®. The location and availability of these assets must be in sync in both the LMS and ONARKEN® to ensure the security of the assets and the integrity of each transaction. Otherwise, unavailable asset or empty locker might get chosen for loan or non-empty bay might get chosen for return.

LapSafe®