Release Notes: Release Ready

SabreSonic CSS Digital Connect

Version 4.2

Software Version 4.2

Document Edition 1.1 (March 2020)

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Table of Contents

Introduction

1

1.1   Document Overview

This document contains release notes information for *SabreSonic® CSS Digital Connect* Release 4.2. Read this document so that you are aware of changes to the solution.

1.2   Release Identification

Release Version	Type (Version, Update, or Patch)	Date	Approved By	Description of Change
4.2	Update	March 2020	Rafał Hołub, Joyce Schofield	JIRA numbers added

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Release Features

2

2.1   Summary of Features

- Enhance Configuration Support via Site Administration Tool
- Self Service Re-accommodation Manager (SSRCM)
- Loyalty
- Payment and Fulfillment
- Flat Fee Upgrade

The following sections explain more detail about the new item.

2.1.1   Enhance Configuration Support via Site Administration Tool

2.1.1.1   Site Administration Tool (SAT) Configuration Support for Points of Sale (POS)

Previous releases have provided the categorization of configurations in Site Administration Tool (the successor of STAN). The categorization together with configurations description improves efficiency and provide better support to the overall user experience of the Airline user.

Successful implementation of configurations categorization in Site Administration Tool enables Airlines to navigate categories to find required configurations and their descriptions including default values, allowed values, tags and types.

Digital Connect v4.2 improves the usability of DC/DCSE bundle in SAT by facilitating editing for non-technical users. The added schema validations decrease the possibility of manual mistake input.

Prerequisites

- Airlines must have access to Site Administration Tool (SAT), which replaces STAN.
- *Digital Connect* 4.2 is certified to work with Site Administration Tool 4.1 (or higher) PROD instance being in the place.
- The feature is active by default for Airlines which have DC-SAT integration turned on using *Digital Connect* 4.1.
- To activate this functionality, an Airline needs to switch a given storefront from database source of configuration to the source in SAT (v4.1, or the following). It must be activated/configured as a part of process that requires preparing SAT bundle and DC/DCSE configuration, so that it is dependent on DC-SAT integration (part three) team feature.
- In case there are storefronts already using SAT configuration, creation of new bundle using standard migration process to get files following new JSON file schema structure is recommended.

Limitations

Currently, all service configurations are exposed to Sabre site administrators only. An Airline who is a customer of *Digital Connect* needs to request configuration changes using the current request process.

<u>2.1.1.1.1   Highlights</u>

Digital Connect 4.2 and SAT 4.1 integration introduces the following items:

- New JSON files structure:
  - PASSENGER.json
  - TIMEZONE.json
  - MUTATION_RULES.json
  - AIRLINE.json
  - LOCATIONS.json
  - FLIGHT_ADVISOR.json
- Support for tags in SAT 4.1:
  - a category is cloned to tag filed when a tag is missing missed in PROPERTIES.schema.json.
  - dictionary of tags and categories has been created/is available.
- Rollback to DB support:
  - ConfigurationDirector – export to files when DC/DCSE is on S3.
- Clean up of not used domains:
  - CREDIT_CARD.json
  - BNPL.json
  - SURCHARGES.json

2.1.2   Self Service Re-accommodation Manager (SSRCM)

2.1.2.1   2019 SSRCM Ensure Original MVP Capabilities Are Working as Expected

Airlines need a way to offer self-service re-accommodation option to customers to give them control of their bookings that have been impacted for various reasons, for example Irregular Operation events or special Passenger treatment. To achieve that, Airlines need the minimum viable product capabilities working according to their expectations.

Note   An Airline is responsible for advising the Passenger that an Irregular Operation occurred. Passenger's reservation can be exchanged or refunded without financial impact to the Passenger (based on rules defined in Re-accommodation Manager).

Digital Connect v4.2 meets Airlines expectations of Self Service Re-accommodation Manager by ensuring the minimum viable product (MVP) capabilities are working as expected with the following enhancements:

1. WK scenarios – enabling Passengers to exchange PNRs with segments in WK status when an Airline did not make an alternative booking.

2. Queue placement – 3 new queues have been created for Irregular Operation events by placing the below scenarios into dedicated reservation queues:

    a. Ancillaries are not available on new Flight or ancillary/seat re-association failed.

    b. Application was unsuccessful in exchanging IROP-affected VCR.

    c. Application was unsuccessful in cancelling/refunding IROP-affected VCR.

3. Sending coupon information to Automated Exchanges and Refund (AER) – *Digital Connect* sends coupon number(s) and entitlement(s) in the AER request irrespective if ticket is partially flown or fully unflown in order to re-issue ticket correctly for impacted IROP segment(s).

4. Skipping BrandCode in AERRQ - in case of IROP exchange, when the fare selected by the Passenger is eligible for fare difference waive and change fee waive and as a result, the exchange is without additional collection, then the BrandCode parameter is not sent to the AER service.

Digital Connect v4.2 integrates also Exchange Shop (Exchange Context Shop) and Self Service Re-accommodation Manager (involuntary exchanges) into one exchange shopping flow. Airlines no longer have to choose between these solutions. Passengers are now able to shop for new flights using SSRCM waivers in Exchange Shop. They can see correct prices of flights with waivers and without them.

Prerequisites

- Airline must be using Self Service Re-accommodation Manager (SSRCM).
  - Rules for IROP-affected flights need to be set up in the Self Service Re-accommodation tool.
- IROP must be configured in *Digital Connect*.
- Manage Your Booking – Change Itinerary flow (MYB: CI) and/or Manage Your Booking – Cancel and Refund flow (MYB: CR) must be enabled.
- Airline must configure queue numbers for each new queue created.
- PNR must be IROP-affected (ticket qualifies for waiver).
- To have an option to exchange the ticket, it must be paid prior to IROP situation.
  - Book Now Pay Later – if the PNR is not fulfilled (no tickets issued), *Digital Connect* blocks the purchase transaction.
- For "SSRCM and Exchange Shop Basic Integration" project only: Airline must have Exchange Shop functionality activated.

Limitations

This feature is not supported in the following scenarios:

- Path offload
- Partial VCR Exchanges (partial document exchange - exchanging only affected coupons and leaving in the original VCR not affected coupons)
- Partial VCR Refunds (partial document refund - refunding only affected coupons and leaving in the original VCR not affected coupons)
- Interline connections
- Codeshare flights
- PNRs with Multiple VCRs for the same Passenger (current *Digital Connect* and Exchange Shop limitation)
- Multicity scenarios (this is current limitation of MYB: CI flow).

Exception (both conditions must apply for exchange process to go through):

- If Multicity is created by modifications made by *Digital Connect* Service (performing .HKALL and adding related remark)

- If itinerary has two legs and Return Trip changed due to IROP situation, the reservation is changed to Multicity

- Loyalty (never done in *Digital Connect* in the exchange flow. Award bookings have post-booking options like exchange blocked. Exchanges and refunds are handled by the Airline directly)

- Flight Promotions (Flight Promotions are not supported in post-booking flows)

- Manage Your Booking – Modify Trip Options (MYB: MTO) flow is blocked.

Notes

- INVOLUNTARY REFUNDS work only for refundable tickets. If a ticket is nonrefundable, it is not refunded even in case of flight cancellation or delay.

- INVOLUNTARY EXCHANGES work for NON EXCHANGEABLE tickets but only if offer "Change Fee and Fare difference waive" is applied. If offer type "Change Fee waive" is applied, exchange transaction fails.

Currently, *Digital Connect* performs .HKALL host entry that does not exchange the tickets, but instead revalidates them. Only Ancillary Reaccom Utility (ARU) exchanges the tickets if needed:

- *Digital Connect* still attempts to perform .HKALL if PNR has not been 'resolved'; however, it resolves the situations where only a revalidation is needed. .HKALL returns 'success'; however, the ticket is not actually resolved. Cases where ticket exchange is likely required include:

  - Route changes – different transit point, board or off-board point

  - Route changes – direct flight changed to connecting flights

  - Route changes – connecting flights changed to direct flight

  - Reservation Booking Designator (RBD) changes – original booking class changes

  - Operating Carrier – PNR booked on an OA segment

  - VCR status – VCR status is other than OK.

2.1.2.1.1   Highlights

Digital Connect behavior depends on fare rules and offer types:

Refund scenarios:

- NONREFUNDABLE fares – the tickets are not refunded even if a valid SSRCM rule with waivers is set up. The Passenger needs to contact Airline Agent or Airline Call Centre to get the refund.

- REFUNDABLE fares – the tickets are refunded:

  - REFUNDABLE fares without a cancellation fee – full refund is processed

  - REFUNDABLE fares with a cancellation fee – full refund is processed when offer type "Cancel fee waive" is applied.

Exchange scenarios:

- NONEXCHANGEABLE fares – the tickets are exchanged with no additional collection when offer type "Change Fee and Fare difference waive" is applied.

- EXCHANGEABLE fares with and without a change of booking fee – the tickets are exchanged:
  - EXCHANGEABLE fares with change of booking fee waive:
    – Without fare difference (the same fare available) – no additional collection
    – With fare difference – fare difference must be collected.

  - EXCHANGEABLE fares with a change of booking fee waive and fare difference waive:
    – Without fare difference (the same fare available) – no additional collection
    – With Fare difference – no additional collection.

If retrieving eligibilities call fails, the Passenger continues the exchange process as normal but benefits for IROP PNRs are not applied.

WK scenarios – enabling Passengers to exchange PNRs with segments in WK status when an Airline did not make an alternative booking

Digital Connect v4.2 changes system behavior when the flight is cancelled due to IROP (Irregular Operations) situation and no alternative flights can be offered to the Passenger. The existing solution allowed the Passenger to enter only Manage Your Booking – Cancel and Refund flow, while other post booking options were disabled based on rules.

There is a new capability to offer Exchanges when an Airline changed the segment status in a PNR from HK (hold confirmed) to WK (was confirmed) but did not book any new flight/flights (no SC segment in the PNR). If any WK segments are displayed on the face of the PNR an Airline does not block Manage Your Booking – Exchange flow. The .HKALL call is not executed, therefore, inactive segment(s) in WK status are not removed from the face of the PNR and Passengers are able to search for new flights, select them and proceed with exchange transaction.

The old rule **iropExchangeWK** (IROPExchangeWKRule class) blocking the access to exchange flow, when at least 1 segment is only in WK status, has been removed and replaced by the new rule. The new rule **iropOnlyWK** (IROPOnlyWKRule class) does not block access to exchange flow and prevents removing segments in WK status thus allowing Passengers to search for new flights, select them and proceed with an exchange transaction.

When the Passenger completes the new flight selection, selects the form of payment (only when additional collection for an exchange is required according to the rules set in SSRCM – please refer to Exchange Scenarios) and decides to exchange the ticket, the application calls pnr/exchange/purchase POST which executes the following actions:

- purchase and ticket an exchanged booking

- re-associate seats and ancillaries if reassociation criteria are fulfilled

- change SS statuses to HK

- removes all WK statuses.

New queues added for IROP scenarios

Digital Connect v4.2 adds handling of queue placement of PNRs for defined scenarios during IROP irregularities. New configurable queues have been added for the following scenarios:

- Ancillaries are not available on new Flight or ancillary/seat re-association failed;
    - **key**: SSRCM.emd.exchange.failed
    - **default value**: 465
- Application was unsuccessful in exchanging IROP-affected VCR;
    - **key**: SSRCM.VCR.exchange.failed
    - **default value**: 499
- Application was unsuccessful in cancelling/refunding IROP-affected VCR.
    - **key**: SSRCM.cancel.failed
    - **default value**: 500

Those PNRs can be manually handled by the Airline Agent.

Sending coupon to AER

Digital Connect v4.2 enhances the call to AER by providing coupon number(s) and entitlement(s) during an IROP situation. This change applies to IROP exchanges for full and partial exchange. Coupon section is always sent in AERRQ irrespective if VCR is partially used or wholly open. It does not apply to regular exchanges or schedule change scenarios.

When the Passenger selects the form of payment, completes the new flight selection and decides to exchange the ticket, the application calls /pnr/exchange/purchase POST with modified AER call:

- *Digital Connect* sends coupon section with coupon details for the IROP-affected PNRs;
    - *Digital Connect* does not send remaining open coupons to AER.
- When *Digital Connect* sends the coupon section, it also needs to send the entitlement;
    - Entitlements are the segments to be issued on the new ticket resulting from IROP-affected segment(s).

Skipping BrandCode in the AERRQ

Digital Connect v4.2 changes handling of 1st AER call (Automated Exchanges and Refund) for the IROP-affected flight(s) eligible for change of booking waive and fare difference waive. The 1st AER call prices the new selected itinerary in the context of the original ticket. <Transaction Action="Exchange">.

When the Passenger selects such flight(s) *Digital Connect* ignores the configuration exchange by brand and does not include **BrandCode** in the AERRQ. As a result, the INVOL or SCHED change AER action is performed. *Digital Connect* continues the exchange process.

For other fare(s) 1st AER call remains the same and **BrandCode** is included in the AERRQ:

- standard fare without benefits is selected – the **BrandCode** is sent;
- free fare selected on the outbound and standard fare selected on the inbound – the **BrandCode** is sent.

SSRCM and Exchange Shop Basic Integration

To allow Passengers to shop for new flights in IROP-affected PNRs and see fares with and without waivers *Digital Connect* integrates Exchange Shop (voluntary exchanges) and Self Service Re-accommodation Manager (involuntary exchanges) into one exchange shopping flow.

Airlines no longer have to choose between these solutions. Passengers are now able to shop for new flights using SSRCM waivers in Exchange Shop. They can see correct prices of flights with waivers and without them.

To be able to pass the correct information in the Exchange Shop Request and receive in the Response offers from Self Service Re-accommodation Manager the following changes have been added to the Exchange Shop flow:

- Exchange Shop integration with services: GetRes, ACSFlightDetails, SSRCM;

- Additional call to GetRes, ACSFlightDetails and Self Service Re-accommodation Manager (SSRCM) in QueryProducts in Exchange Shop when PNR is IROP-affected;

- Handling other than HK statuses e.g. exchange flow with no active segments - getting the flight status WK (Was Confirmed) instead of HK (Hold Confirmed) or SC/WK.

The required remarks from Exchange Shop and from SSRCM are added to the PNR:

- 5H remarks received from SSRCM to indicate that ticket was exchanged according to SSRCM rule

- 5H remarks received from Exchange Shop

- If multiple SSRCM rules are returned, all need to be stored in the remarks.

2.1.3   Loyalty

2.1.3.1   Redemption Availability request to Star Hub

Star Alliance is one of the world's largest aviation alliance, which maintains a centralized hub providing availability for all Star Alliance partners' and member carriers' redemption bookings. Since the redemption availability for Non-Hosted, Non-DCS carriers is not seamless in most of the cases, this hub enables the Star Alliance carriers to check seamless availability to partner data. It receives updates from each carrier that keeps the availability data current and ready for consumption by other Star Alliance carriers.

The Sabre hosted carriers who are Star Alliance members must have access to this data and be able to sell host and Other Airlines (OA) segments for any redemption itinerary from all Point of Sale (POS) platforms.

Digital Connect v4.2 enables AirBook web services and bundled sell to work correctly when booking redemption fares for OA carrier belonging to Star Alliance.

This functionality applies to the following paths:

- the Redemption (RBE) flow

- Manage Your Booking – Change Itinerary (MYB: CI) flow
  - Loyalty Phase 3 (LP3): Exchange.

2.1.3.1.1   Prerequisites

None

2.1.3.1.2   Limitations

- With the new version upgrade, the following values are deprecated:
  - MDR_Subset
  - Code Context
  - However, it has been hardcoded by the *Digital Connect* downline, i.e. AIRBOOKLLS service.

- The element of MDR_Subset is handled automatically by the downline as it is hardcoded.

- Since AIRBOOKLLS service has deprecated the Code Context value and has hardcoded it to IATA, ONLY IATA Code Context is used henceforth.

- It is not applicable for bookings where the Revenue bookings (B2C) are converted to points.

2.1.3.1.3   Highlights

Functional Coverage from *Digital Connect* downline systems

1. If the segment is being booked via long-sell, the Availability Status (AVS) for the Revenue Booking Designator (RBD) on the segment being booked is checked.
   a. If the RBD is not found, the segment is booked on a request basis (NN) and remains in a PN/UC status at end-transaction until confirmed/denied by the receiving carrier, which is a time-consuming process.

2. To overcome this Star Alliance has built a centralized database called *Star Hub*, where the availability is checked seamlessly for Redemption Bookings.

3. *Digital Connect* identifies the redemption bookings and passes the special indicator where downline identifies the type of carrier, and if it is a Star Alliance carrier who has seamless availability on *Star Hub* database, then it forces sell.

4. Solution design built at Sabre does extend to All carriers/Alliance members.

The Redemption flow (RBE)

1. The Airline obtains search criteria from the Passenger and submits a **/products/air/search** request, **POST** operation to get a list of flights matching the search criteria.
   a. The Airline UI displays the returned flights to the Passenger on the Flights page.

2. The Airline uses **/login POST** to log the Passengers in by the provided data authentication, i.e. account ID and password.

3. The Passenger selects one or more flights. The Airline submits the **/products/air POST** operation to add the flight(s) to the itinerary and store the itinerary in the session.
   a. The Airline prompts Passenger for Passenger details: first name/surname/gender, date of birth, phone number, email address etc.

4. The Airline uses **/Passengers POST** to add Passenger to the itinerary.

5. The Airline can use the **/products/cart GET** to obtain a list of all products that have been selected by Passengers (list of selected itineraries, ancillaries, seats, discount, price information, bags, carry-on, and embargo information) and a price breakdown for all the selected products.

6. When the Passenger indicates that shopping is complete the Airline obtains available payment options for the current itinerary by calling **GET /paymentOptions**. The Airline can format the information for display to the Passenger.

7. When the Passenger selects form of payment, completes the payment and decides to purchase, the Airline initiates the purchase and ticketing process by calling **/purchase POST**. If authorization is successful, the /purchase service creates a PNR, EMD(s), etc.
   a. New feature: For redemption bookings, RedemptionSell Flag is set to true in the Airbook service.

8. The Airline returns a **/purchase** service **POST** operation response and the confirmation page is displayed.

9. The Airlines submit a **/pnr GET** request. The Airline can format the information for display to the Passenger.

2.1.4   Payment and Fulfillment

2.1.4.1   Credit card installments with and without interest for post-booking flows (BNPL, MTO and Exchange)

Digital Connect v4.2 allows Airlines to identify air and ancillary transactions as well as promotional and non-promotional installment criteria to settle these transactions to different Merchant Identification Numbers (MID).

During the credit card transaction process, air and ancillary transactions are identified along with promotional and non-promotional installment plans. The Sabre Points of Sale (POS) indicates if an installment plan is promotional and/or non-promotional in the PaymentRQ derived from the PaymentQueryRS.

This functionality applies to the following post-booking flows:

- Manage Your Booking – Book Now Pay Later (MYB: BNPL)
- Manage Your Booking – Modify Trip Options (MYB: MTO)
- Manage Your Booking – Change Itinerary (MYB: CI).

Note   While this feature may only apply to certain markets where Airlines are offering the payment option of Credit Card with installments, the feature is available to the *Digital Connect* customer community.

Prerequisites

This functionality is enabled in Payment Web Services (PWS) and activated by default.

Limitations

Currently, *Digital Connect* does not return the promotional indicator for purchase and PNR retrieval calls. The scope is only to support those transactions where downline returns ProductID in response.

2.1.4.1.1   Highlights

Post-Booking flow for BNPL

1. The Passenger retrieves a booking either by supplying basic PNR information or by logging into the Frequent Flyer account. If the Passenger is logged-in, all their active reservations are visible. Airlines can prompt Passengers for information that identifies a PNR, retrieve the information and format it for display to the Passenger by calling **/pnr GET**.

2. The **/pnr** service **GET** operation returns information for the PNR specified in the parameters. Airlines can prompt Passengers for information that identifies a PNR, to retrieve the information and format it for display to the Passenger.

3. The Airline obtains available payment options for the current itinerary by calling **/pnr/bnpl/paymentOptions GET**.

4. When the Passenger selects ancillaries, the Airline calls **/pnr/bnpl/products/ancillaries POST** and adds selected ancillaries to the reservation.

5. The Airline calls **/pnr/bnpl/products/seats GET** to obtain seat map for the currently selected itinerary. The Airline formats information about the seat map and available seats to the Passenger.

6. When the Passenger selects seats, the Airline calls **/pnr/bnpl/products/seats POST** to add seats selected by the Passenger to the itinerary.

7. The Passenger selects an insurance offer after the Airline retrieves the available offers by calling **/pnr/bnpl/products/insurance GET**.

8. The Passenger selects an installment offer retrieved by **/pnr/bnpl/paymentOptions/installments GET** call. The offers contain Equated Monthly Installments (EMIs) varying as programmed, e.g. 1-month, 3-months, 6-months. The Airline can program to offer EMIs with or without interest.

9. When the Passenger selects a form of payment, completes the required payment information and decides to purchase, the Airline initiates the purchase and ticketing process by calling **/pnr/bnpl/purchase POS**T; if authorization is successful, the **/pnr/bnpl/purchase** service also adds installment remark to the PNR.

10. The response indicates whether the purchase is successful.

11. The Airline formats this information for display to the Passenger.

Post-booking flow for MTO

1. The Airline retrieves PNR information and initializes Manage Your Booking – Modify Trip Options (MYB: MTO) flow (with verification of MYB Rules) by calling:
   - **/pnr/mto/ancillaries** – for Ancillaries flow – where the Passenger can manage ancillaries and seats;
   - **/pnr/mto/seats** – for Seats flow – the Passenger can only manage seats.

2. 2. The Airline calls **/pnr/mto/products/ancillaries GET** to obtain list of ancillaries available for the currently selected itinerary. The Airline formats information about ancillaries available to the Passenger.

3. When the Passenger selects ancillaries, the Airline calls **/pnr/mto/products/ancillaries POST** and adds ancillaries to the reservation.

4. The Airline calls **/pnr/mto/products/seats GET** to obtain seat map for the currently selected itinerary. The Airline formats information about the seat map and available seats to the Passenger.

5. When the Passenger selects seats, the Airline calls **/pnr/mto/products/seats POST** to add seats selected by the Passenger to the itinerary.

6. The Airline can call **/pnr/mto/products GET** operation to obtain a current list, with prices of products that the Passenger has added to the itinerary and use this information to build and display a shopping cart.

7. When the Passenger indicates that modified shopping is complete, the Airline calls the **/pnr/mto/paymentOptions GET** service to obtain available forms of payment.

8. The Passenger selects an installment offer retrieved by **/pnr/mto/paymentOptions/installments GET** call. The offers contain EMIs varying as programmed, e.g. 1-month, 3-months, 6-months. The Airline can program to offer EMIs with or without interest.

9. When the Passenger selects form of payment, completes the payment and decides to purchase, the Airline initiates the purchase and ticketing process by calling **/pnr/mto/purchase POST**. If authorization is successful, the **/pnr/exchange/purchase** service adds installments remark to the PNR.

10. The response indicates whether the purchase is successful.

11. The Airline formats this information for display to the Passenger.

1. The Passenger retrieves a booking either by supplying basic PNR information or by logging in to a Frequent Flyer account. If the Passenger is logged in, all their active reservations are visible. Airlines can prompt Passengers for information that identifies a PNR, retrieve the information and format it for display to the Passenger by calling **/pnr GET**.

2. If the Passenger wants to apply changes to their PNR, the **/pnr/exchange service GET** operation returns information for the PNR specified in the parameters and initializes Exchange process.

3. The Airline obtains search criteria from the Passenger and submits a **/pnr/exchange/products/air/search** request **POST** operation to get a list of flights matching the search criteria.

4. Airline UI displays the returned flights to the Passenger on the Flights page. For each available flight the Passenger can open the Seat Map preview overlay by clicking a View Seats link.

5. After the Passenger selects one or more flights, the Airline submits the **/pnr/exchange/products/air POST** operation to add the flights to the itinerary and store the itinerary in the session.

6. The Airline calls **/pnr/exchange/products/ancillaries GET** to obtain list of ancillaries available for the currently selected itinerary. The Airline formats information about available ancillaries to the Passenger.

7. When the Passenger selects ancillaries the Airline calls **/pnr/exchange/products/ancillaries POST** to add ancillaries selected by the Passenger to the itinerary.

8. The Airline calls **/pnr/exchange/products/seats GET** to obtain Seat Map for the currently selected itinerary. The Airline formats Seat Map to the Passenger.

9. When the Passenger selects seats, the Airline calls **/pnr/exchange/products/seats POST** to add seats selected by the Passenger to the itinerary.

10. The Airline can call **/pnr/exchange/products GET** operation to obtain a current list, with prices of products that the Passenger has added to the itinerary and use this information to build and display a shopping cart.

11. When the Passenger indicates that shopping is complete the Airline obtains available payment options for the current itinerary by calling **/pnr/exchange/paymentOptions GET**. The Airline can format the information for display to the Passenger.

12. The Passenger selects an installment offer retrieved by **/pnr/exchange/paymentOptions/installments GET** call. The offers contain EMIs varying as programmed, e.g. 1-month, 3-months, 6-months. The Airline can program to offer EMIs with or without interest.

13. When the Passenger selects their form of payment, completes the payment and decides to purchase, the Airline initiates the purchase and ticketing process by calling **/pnr/exchange/purchase POST**. If authorization is successful, the /pnr/exchange/purchase service adds installment remark to the PNR.

14. The response indicates whether the purchase is successful.

15. The Airline formats this information for display to the Passenger.

2.1.5   Flat Fee Upgrade

Flat Fee Upgrade (FFU) flow gives Passengers an option to upgrade their existing booking to a higher cabin class for a flat monetary fee or fixed amount of points. The flat fee amount is in most cases cheaper than the actual upgrade amount and usually more restrictive as the Airline can decide to enforce the fare rules of the original fare rather than the fare rules associated with the higher cabin. FFU feature allows Passengers to

purchase an upgrade if seats are available in a dedicated booking class. That allows Airlines to maximize revenue by selling available seats in higher cabins.

The Airline decides and configures in advance which forms of payment is allowable, so Passengers on the Payment Page (on the Airline's UI) do not have an option to decide how they want to pay.

Digital Connect supported only two kinds of payment during that flow: cash or dynamic points (when points are calculated using a conversion rate).

In addition, this feature was available only for Airlines that use *GetPriceList* for getting ancillary offers. *Digital Connect* v4.2 gives Airlines the following enhancements:

- an option to support the FFU functionality as fixed points

- shopping for FFU upgrades via SE *QueryAncillaries*.

Prerequisites

- Flat Fee Upgrade flow (FFU) is not activated by default, it is activated with configurations and by the activation script.

- Airline must enable either Flat Fee Upgrade (FFU) or Frequent Flyer Upgrade (FQTU), both cannot be enabled.

- Airline must configure allowable Forms of payment – cash or points.

- Airline must file fixed points in the ACD file.

- Airline needs to file upgrade ancillary fee per segment as OC/AE in ATPCO/Merchandising Manager.

- Airline needs to map the booking classes for the relevant upgrade booking class.

- Airline can enable various rules when upgrades are to be offered, e.g. time before departure, ticket stock, booking class, etc.

Limitations

- Flat Fee Upgrade flow can be either configured as cash or points, so Passengers during purchase do not have an option to decide how they want to pay for the upgrade, the Airline defines the form of payment.

- Flat Fee Upgrade flow is supported only on own carrier – it is not supported for codeshare or interline carriers.

- All Passengers on the PNR must be upgraded as *Digital Connect* does not support split PNR functionality.

- Airline must file ancillary per segment, not per itinerary part.

- Only EMD-A (associated) can be issued for the upgrade.

- Only "free-zero value" seats are supported in the new upgraded cabin.

- No discounts are permitted for fixed price upgrades.

2.1.5.1   Highlights

There are no contract changes but *Digital Connect* is now able to support Flat Fee Upgrade as fixed points and to shop for Flat Fee Upgrade offers via SE QueryAncillaries.

3

Defect Fixes

3.1 Summary of Defects

The following sections explain more detail about the defects.

- Manage Your Booking (MYB): FJ to AU Exchange – Payment failure
- IU fails if ARNK in itinerary causing error response: VERIFY COUPON STATUS -1662
- Remove email address from Fraud phone field
- TravelBank funds not being refreshed after logging in with different user
- Baggage allowance pieces discrepancy when using Corporate ID
- Manage Your Booking Digital Experience (MYB DX) failed to reissue the ticket error RMKS in PNR no PQR Exists
- Unable to retrieve PNR
- No Schedule error response while schedule is available
- Ancillary error for Priority Boarding
- Ticket Exchange – Corporate ID/Account Code is not being used on exchange shopping results
- Seat Map Service: DCCI returns multiple priceReferences for each passenger for the same set of seat numbers
- Mutation Rules are not working correctly and giving error in some cases
- Duplicate tickets issued with the same approval
- Error message after fraud check reject/review response
- Unable to complete booking
- Upgrade – Incorrect upgrade points
- FraudCheckRQ.ThirdPartyBookingInd not set correctly if the middle name is present
- Additional Authorization request on Seat ancillary MTO
- MYB – EXCHANGE – Direct to connector Economy X refunding and not recharging
- VNDX – Issues with EMD on IBE
- Mixed cabin itineraries are displaying incorrect fare basis in Shopping Cart and unable to finalize PNR for fixed reward
- Missing Aircraft Type

3.1.1 Manage Your Booking (MYB): FJ to AU Exchange – Payment failure

JIRA #:
DC-5940
Title:
Manage Your Booking (MYB): FJ to AU Exchange – Payment failure
Description:

A Passenger failed to exchange (i.e. select 1 seat and 2 bags) their return flight (FJ to AU, with seats and bags purchased before):
 	
• Payment failure for this PNR – Payment validation error – payment.invalid.payment.currency message triggered on Payment page.
• Payment Surcharge charged for exchange another country PNR
  ○ Qiktool should exempt this PNR and Booking;
  ○ Service Fee should be collected in path.
 	
In B2C Revenue and Exchange flow, the same PseudoCityCode can be found in QueryProductsRQ, which works fine with the current code.
 	
In B2C Award and Exchange flow, PseudoCityCode in QueryProductsRQ is different, which leads to payment failure in Exchange flow purchase

Resolution:
After the code fix the same PseudoCityCode can be found in QueryProductsRQ.

3.1.2 IU fails if ARNK in itinerary causing error response: VERIFY COUPON STATUS - 1662

JIRA #:
DC-6828
Title:
IU fails if ARNK in itinerary causing error response: VERIFY COUPON STATUS -1662.
Description:
After ticket is reissued from flights with Arrival Unknown (ARNK) status to flights without ARNK, the Sabre API service chooses the wrong VCR resulting in the error response – VERIFY COUPON STATUS-1662. The issue was happening because when PNR has VOID segment, *Digital Connect* (DC) parses it as "OK" status segment. In IU the existing DC logic was used to filter "OK" status segments.
Resolution:
A new method to exclude VOID segments even if they are in "OK" status has been developed. The new filter is used in AER_RQ, UpdateReservationRQ and CollectMiscFeeRQ requests.

3.1.3 Remove email address from Fraud phone field

JIRA #:
DC-6897

Title:
Remove email address from Fraud phone field.
Description:
When there is more than one phone number in the PNR, Sabre is sending only the first one in the FraudCheckRQ. Some phone fields contain email addresses.
Resolution:
The fraud team requires the phone number data, so it was necessary to make the change to only send phone number values in the Passenger Phone field. The provided fix filtered the phone numbers with -E (email) from ContactInfo PhoneNumber field in FraudCheckRQ.

3.1.4 TravelBank funds not being refreshed after logging in with different user

JIRA #:
DC-6087
Title:
TravelBank funds not being refreshed after logging in with different user.
Description:
When the login is done with different users, *Digital Connect* is returning the TravelBank (TB) balance correctly. However, though the TravelBank amount in Payment Options Section should be refreshed after the login, it is showing the previous logged-in user's value.
After login with the second user, TB call is still giving 0 amount to be applied even though login call is returning the correct balance.   - Expected Result – $XX.YY TB funds balance displayed to user to use towards current booking.   - Actual Result – $0.00 TB funds balance displayed to user. User cannot use TB towards this booking.
Resolution:
An additional check was introduced to see if the logged-in user is the same as the user stored in the session while updating the balance. If different, then the previous user is cleared from the session and replaced with the newly logged in user.

3.1.5 Baggage allowance pieces discrepancy when using Corporate ID

JIRA #:
DC-5470
Title:
Baggage allowance pieces discrepancy when using Corporate ID.
Description:
It has been reported that while pricing with Corporate ID QCU24 in which there were 3 pieces of baggage (among other baggage data), there occurred a discrepancy for 7F Airlines as the "baggage information" was showing 2 pieces of baggage.
Digital Connect provides default max 2 free pieces of baggage despite of any Corporate ID use.

Resolution:
A code fix has been implemented so that Airlines users can get more than 2 pieces of baggage for free.

3.1.6 Manage Your Booking Digital Experience (MYB DX) failed to reissue the ticket error RMKS in PNR no PQR Exists

JIRA #:
DC-5421
Title:
Manage Your Booking Digital Experience (MYB DX) failed to reissue the ticket error RMKS in PNR no PQR Exists.
Description:
It has been reported that the reissues failed from MYB DX for certain PNRs. Payment is deducted but there is no reissue. This issue is happening when payment is declined in the Exchange flow, and then user corrects the payment details and resubmits the exchange in the same session. Payment gets the approval in the second attempt, but AER call returns NO PQR Exist.
Resolution:
Addition of the logic to handle handleHardFail in Exchange Flow properly, when payment is declined during the Exchange flow, *Digital Connect* is stopping the flow to give an opportunity for user to come back with successful payment authorization.

3.1.7 Unable to retrieve PNR

JIRA #:
DC-6802
Title:
Unable to retrieve PNR.
Description:
A Passenger was not able to retrieve a PNR in MYB. "Your Booking Was Not Found" error message was displayed to the Passenger when they were trying to retrieve the PNR details.
Resolution:
In Passenger Request DocumentInfo Object was coming with null value for countryOfBirth attribute. Therefore, a Null check was added for this to avoid Null Pointer Exception.

3.1.8 No Schedule error response while schedule is available

JIRA #:
DC-5987
Title:
No Schedule error response while schedule is available.

Description:
While searching a round trip flight where schedule is available for Outbound (OB) flight but not for the Inbound, *Digital Connect* is giving an error response 'No Schedule' for the Outbound flight as well. Instead, the 'No Schedule' response was supposed to be displayed after selecting the Inbound flight (because flight on the selected OB departure date is available).

Resolution:
Addition of the required logic to process and return (in QueryProducts RS) the Outbound flight that was received from OTA even when the Inbound flight schedules do not exist.

3.1.9 Ancillary error for Priority Boarding

JIRA #:
DC-6375

Title:
Ancillary Error for Priority Boarding

Description:
Inability to select Ancillary Priority Boarding for flights to JFK as destination has been reported. While on the booking flow, once we get to the Ancillaries tab and we select "Priority Boarding" the following error response is received: "**Ancillary error** Ancillary you selected was not added to cart. Make sure you have checked all the required field."

Resolution:
AncillaryOffer is for "0G6" duplicate entries, one is OfferPerPax with empty value, and the other one is coming with value from the downline service (Ancillary). Therefore, *Digital Connect* is filtering out AncillaryOffer which is coming empty value for OfferPerPax Details

3.1.10 Ticket Exchange – Corporate ID/Account Code is not being used on exchange shopping results

JIRA #:
DC-5697

Title:
Ticket Exchange – Corporate ID/Account Code is not being used on exchange shopping results

Description:
7F is experiencing an issue with exchanges when the original ticket is issued with a Corporate ID (negotiated fare). During the Exchange flow, Digital Experience (DX) Shop & Book is not picking up the Corporate ID and so not sending it with the QueryProductsRQ when shopping for the new itinerary. As a result, the fare is a much higher published fare and the corporations are paying a very high additional collection due to the difference in fare. Exchanges are working fine in SSW v12 (when the original ticket was issued with a Corporate ID/Account Code) and DX is not. DX should be picking up the Account Code/Corporate ID when pricing the new itinerary but is not. It appears that *Digital Connect* is not including this sending in the shopping request for the exchange. Also, an inability to refund a PNR that was used to test the promo code situation (which happens regardless the promo code) has been reported.
Resolution:
The resolution was to include the original Corporate ID or Account Code that was used with the original ticket when sending the shopping request for an exchange. Including this Corporate ID/Account Code ensures the correct negotiated (not a full published) fare is received.

3.1.11 Seat Map Service: DCCI returns multiple priceReferences for each passenger for the same set of seat numbers

JIRA #:
DC-6825
Title:
Seat Map Service: DCCI returns multiple priceReferences for each passenger for the same set of seat numbers
Description:
Seat legends are varying from one passenger to another and DCCI returns multiple priceReferences for each passenger. SE is creating different price references for passengers, even if there is no price difference and the same OfferID should be returned to both.
Resolution:
Se.adapter.seatmap.populateOfferIdAndOfferItemId configuration property has been added to offerID/offerItemId that is now enabled by default. The configuration is set to FALSE for DC/SE with schema lower than 4.0. OfferId and OfferItemId are not returned and as a result SE does not return duplicate prices.

3.1.12 Mutation Rules are not working correctly and giving error in some cases

JIRA #:
DC-6006
Title:
Mutation Rules are not working correctly and giving error in some cases

3   Defect Fixes

Description:

Mutation rules execution is giving error when domesticFlight or internationalFlight rule is added in "EXCHANGE_ GUEST" or "EXCHANGE_LOGGEDIN" mutation rule.

Current response is a generic message leading to customers to try to purchase the ticket again, generating multiple charges to the credit card.

Message is " ERR.SSW.PURCHASE.CC_PAYMENT_AUTHORIZATION_FAILURE", which is also used for other payment failure errors (not only CYBS reject).

Resolution:

Added code for the rule to validate domesticFlight along with existing rule timeBeforeDeparture which can be used during EXCHANGE_GUEST or EXCHANGE_LOGGEDIN mutation rule to block the exchanges.

Also added supporting code to validate formOfPayment expression that is called during mutation of /pnr/mto/ancillaries flow to identify the BT fop code from payment for a booking.

3.1.13   Duplicate tickets issued with the same approval

JIRA #:	iCRM#:
DC-4696	SR#1-24KNG7C

Title:	
Duplicate Tickets Issued with the Same Approval	

Description:

Some DX PNRs in PROD have been identified with duplicate tickets issued within 3 minutes after the original tickets were issued. As the logs show, the ticketing command is sent twice with the exact approval payment number.

This happens when the user uses the back button on the browser. The second purchase call is sent.

This is happening for BNPL flow, while B2C flow is properly handled by *Digital Connect*. Same handling needs to be applied to the MYB-BNPL flow as well.

Resolution:

New error code (ERR.SSW.PURCHASE.FRAUD_CHECK_ERROR_FAILURE) and error message "An error occurred during Fraud check." has been incorporate in the Purchase API in case of Fraud check has happened instead of throwing generic error message.

3.1.14   Error message after fraud check reject/review response

JIRA #:	iCRM#:
DC-5715	SR# 1-2BSGF1W

Title:	
Error message after fraud check reject/review response	

Description:
Different error messages when a payment is rejected by fraud check are necessary. Current response is a generic message leading customers to try to purchase the ticket again, generating multiple charges to the credit card. Message is " ERR.SSW.PURCHASE.CC_PAYMENT_AUTHORIZATION_FAILURE", which is also used for other payment failure errors (not only CYBS reject).

Resolution:
Added new error code for fraud check.

3.1.15   Unable to complete booking

JIRA #:
DC-6134

Title:
Unable to complete booking

Description:
Passenger was unable to complete the booking and as a result VCR was not issued.
POST operation with the payment status was not recognized and failed to issue the ticket, even though the response had the ResponseCode and ApprovalCode.
There was an issue with the initialization of the following bean:Exception: "NoSuchBeanDefinition
Exception: No bean named 'ssw2010.payment.workflow.afop.pending' available".

Resolution:
The issue has been fixed by loading the bean at the application starting time. The bean has been added in main beans.xml file.

3.1.16   Upgrade – Incorrect upgrade points

JIRA #:
DC-7260

Title:
Upgrade – Incorrect upgrade points

Description:
After the fee conversion from one currency to another, charged points value was 15000, while it should be 14900.

Resolution:
Fixed the points discrepancy between DX and SSW by reading the currency from Booking.PseudoCity instead of reading from currency from the selected itinerary.

3.1.17 FraudCheckRQ.ThirdPartyBookingInd not set correctly if the middle name is present

JIRA #:
DC-5513
Title:
FraudCheckRQ.ThirdPartyBookingInd not set correctly if the middle name is present
Description:
FraudCheckRQ.ThirdPartyBookingInd should be set to FALSE if passenger name and cardholder name do not match.The salutation and middle names should be ignored in the matching process.Currently, the space in name is causing the logic to fail and all transactions are defaulting to TRUE.
Resolution:
Fix has been provided to include middle name also (First name + Middle Name + Last name) to verify with card holder name.

3.1.18 Additional Authorization request on Seat ancillary MTO

JIRA #:
DC-6610
Title:
Additional Authorization request on Seat ancillary MTO
Description:
A passenger selected Seats just for the outbound, completed the Purchase, then accessed MTO to assign seats for the inbound Authorization request which was completed for 270 ZAR while the total price was 150 ZAR.
B2C FullFilled seats were not filtering in the MTO flow, and B2C seats amount and MTO seats amount was showing in MTO Flow.
Resolution:
Until now, in the MTO old seats path, *Digital Connect* was sending payment authorization for the already purchased B2C seat and the purchased MTO seat.
The issue has been fixed by checking that if the seat EMD in B2C is already fulfilled, DC is not sending that seat for purchase during MTO.

3.1.19 MYB – EXCHANGE – direct to connector Economy X refunding and not recharging

JIRA #:
DC-6937
Title:
MYB – EXCHANGE – direct to connector Economy X refunding and not recharging

Description:
A passenger having a direct booking that includes Economy X which they later changed for a connecting flight had the original Economy X refunded and then was not recharged for Economy X on the new flights.

Resolution:
The issue when there are no seats selected in the booking flow but selected in the exchange flow has been fixed – the EMD issued was only for seats on the OB but it needs to consider if seats is added for Inbound also.

3.1.20   VNDX – Issues with EMD on IBE

JIRA #:
DC-6815

Title:
Issues with EMD on IBE

Description:
In Purchase flow the SSR code was getting replaced with three-letter ancillary seat code, creating duplicate EMD with seat number and seat code.

Resolution:
A code fix has been applied to populate the correct seat number.

3.1.21   Mixed cabin itineraries are displaying incorrect fare basis in Shopping Cart and unable to finalize PNR for fixed reward

JIRA #:
DC-6306

Title:
Mixed cabin itineraries are displaying incorrect fare basis in Shopping Cart and unable to finalize PNR for fixed reward

Description:
Mixed cabin itineraries are displaying incorrect fare basis in Shopping Cart and unable to finalize PNR.

Resolution:
Correct fare basis code for each segment is sent during pricing call.

3.1.22   Missing Aircraft Type

JIRA #:	iCRM#:
DC-5942	SR#1-5154735071

Title:	
Missing Aircraft Type	

Description:	
After performing Flight Search (Exchange Shopping), the search results do not include equipment information.	

Resolution:

TKT_ExchangeShopping schema version has been upgraded.