Developer Administration Guide

Bargain Finder Max API

Shop for NDC Carrier Content / Integrate NDC Offers in Shopping

Schema Version 2

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1

API Overview

1.1 Bargain Finder Max Introduction

Bargain Finder Max (BFM), our best-in-class low fare search product, is used to search for the lowest available priced itineraries based upon a specific date. Bargain Finder Max is an interface into the Air Shopping engine through a Universal Service Gateway (USG) and 2nd Generation Services Gateway (2SG) that allows users to use the shopping engine without a traditional Sabre terminal. Users of Bargain Finder Max are developers, business analysts, and customer service agents. When a shopper searches for low fares, the JSON (JavaScript Object Notation) within Bargain Finder Max communicates with the shopping engine and returns the appropriate response. Sometimes, settings within the JSON request or response do not find the expected fares, and to troubleshoot these situations you may need to make changes to the preferences set in the JSON request or response.

NDC Update

New enhancements to our shopping capabilities were made so Bargain Finder Max searches for air offers distributed through the NDC (New Distribution Capability) standard. The new capability allows a Sabre agency to shop for NDC content (both hosted and non-hosted carriers), XML content (LCC), and traditionally filed content (ATPCO), in one transaction. The returned content now contains one integrated shopping response from all sources.

1.2 About This Guide

This guide provides information on the enhancements made to the *Bargain Finder Max API* that allows users to search for air offers distributed through the NDC (New Distribution Capability) standard. Each chapter is as follows:

- Chapter 1, “API Reference” describes the changes and new parameters added to the schemas.
- Chapter 2, “Quick Start Guide” describes the details of the Product Usage and Examples.
- Chapter 3, “Introduction API Specific Errors Introduction API Specific Errors” describes the error messages for Bargain Finder Max functionality.
- Glossary, provides a glossary of terms used in this document.

1.3 Getting Started

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1.4 API Information

This service requires activation, please contact your Sabre Account Representative for assistance.

1.4.1 Target Audience

All Sabre APIs Customers.

1.4.2 Authentication

Sessionless Token

1.4.3 Version information

BargainFinderMax Request/Response Version 2

1.4.4 URI Scheme

Environment	Host	BasePath	Schemes
PROD	https://api.havail.sabre.com/v2/offers/shop	**/v2**	**HTTP**
CERT	https://api-crt.cert.havail.sabre.com/v2/offers/shop	**/v2**	**HTTP**
TEST	https://api.tsts.havail.sabre.com/v2/offers/shop	**/v2**	**HTTP**

1.4.5 Methods/Endpoints

POST /v2/offers/shop

1.4.5.1 Description

POST: Creates offers from the NDC, ATPCO, and LCC content sources.

1.4.6 Technology / Language

REST/JSON

1.4.7 Response Type

GIR – Group Itinerary Response

1.4.8 Contact information

Email: ShoppingWebservicesDocs@sabre.com

Url: https://developer.sabre.com

1.5 Shop for NDC carrier content with Bargain Finder Max API

The purpose of this guide is to describe the NDC (New Distribution Capability) within the *Bargain Finder℠ Max* (BFM) API.

What is it?

The NDC Standard enhances the capability of communications between airlines and travel agents.

This capability enables Sabre to transform the way air products are retailed to corporations, as well as leisure and business travelers, by addressing the industry's current distribution limitations:

- Product differentiation and time-to-market
- Access to full and rich air content
- Transparent shopping experience

What does it do?

Bargain Finder Max supports offer content provided by NDC-compliant carriers when shopping. This solution:

- Reaches out to NDC carriers for offer details
- Interacts with the Offer Store
- Enhances currently existing JSON BFM schemas

How does it work?

This enhancement adds the capability to search for offers distributed through the NDC Standard in one integrated response from all sources.

The enhancement introduces additional parameters to the Bargain Finder Max API's shopping capabilities. The shopping service is available to developers via REST/JSON with the GIR response type.

Quick Start Guide 2

This chapter includes the following:

- Product usage and example (see page 6).
- JSON examples (see page 5-9).

This section includes instructions on how to enable and get shopping offers with the different content sources in the Bargain Finder Max API request and response.

2.1 Product Usage and Examples

2.1.1 Trying the API

Use the API Explorer on Sabre Dev Studio to explore Sabre REST APIs by making calls to the test environment. Please note that you first need to sign in before testing our APIs. You can also view our written documentation.

2.1.2 Use Cases & Examples

The following use case is denoted via REST/JSON only.

USE CASE 1 (*Bargain Finder Max request and response for round-trip itinerary with NDC content returned.*

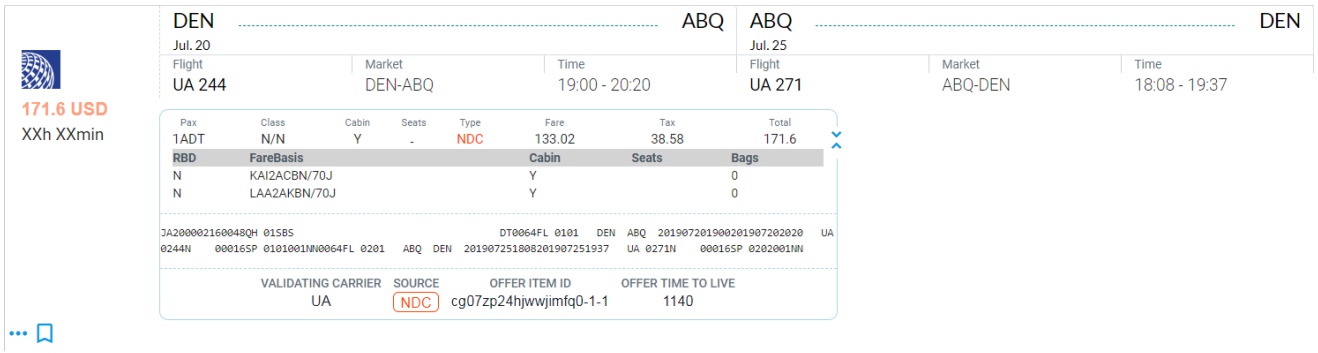
OTA BFM JSON sample request:

```
{
  "OTA_AirLowFareSearchRQ": {
    "Version": "2",
    "POS": {
      "Source": [
        {
          "PseudoCityCode": "PCCX",
          "RequestorID": {
            "Type": "1",
            "ID": "1",
            "CompanyName": {
              "Code": "TN"
            }
          }
        }
      ]
    },
```

```
    "OriginDestinationInformation": [
      {
        "RPH": "1",
        "DepartureDateTime": "2020-07-20T00:00:00",
        "OriginLocation": {
          "LocationCode": "DEN"
        },
        "DestinationLocation": {
          "LocationCode": "ABQ"
        }
      },
      {
        "RPH": "2",
        "DepartureDateTime": "2020-07-25T00:00:00",
        "OriginLocation": {
          "LocationCode": "ABQ"
        },
        "DestinationLocation": {
          "LocationCode": "DEN"
        }
      }
    ],
    "TravelPreferences": {
      "TPA_Extensions": {
        "NumTrips": {
          "Number": 10
        },
        "DataSources": {
          "NDC": "Enable",
          "ATPCO": "Disable",
          "LCC": "Disable"
        },
        "PreferNDCSourceOnTie": {
          "Value": true
        }
      }
    },
    "TravelerInfoSummary": {
      "AirTravelerAvail": [
        {
          "PassengerTypeQuantity": [
            {
              "Code": "ADT",
              "Quantity": 1
            }
          ]
        }
      ]
    },
    "TPA_Extensions": {
      "IntelliSellTransaction": {
```

```
          "RequestType": {
            "Name": "200ITINS"
          }
        }
      }
    }
}
```

NDC Sample response:



GIR JSON Sample:

```
{
  "id": 1,
  "pricingSource": "ADVJR1",
  "legs": [
    {
      "id": 3,
      "schedules": [
        {
          "ref": 8
        }
      ]
    },
    {
      "id": 6,
      "schedules": [
        {
          "ref": 7
        }
      ]
    }
  ],
  "pricingInformation": [
    {
      "pricingSubsource": "NDC_CONNECTOR",
      "offer": {
        "offerId": "cg07zp24hjwwjimfq0-1",
```

```
    "timeToLive": 1140,
    "source": "NDC"
  },
  "fare": {
    "validatingCarrierCode": "UA",
    "eTicketable": true,
    "passengerInfoList": [
      {
        "passengerInfo": {
          "offerItemId": "cg07zp24hjwwjimfq0-1-1",
          "mandatoryInd": true,
          "serviceId": "cg07zp24hjwwjimfq0-1-1-1",
          "passengerType": "ADT",
          "passengerNumber": 1,
          "fareComponents": [
            {
              "ref": 1,
              "segments": [
                {
                  "segment": {
                    "bookingCode": "N",
                    "cabinCode": "Y"
                  }
                }
              ]
            },
            {
              "ref": 6,
              "segments": [
                {
                  "segment": {
                    "bookingCode": "N",
                    "cabinCode": "Y"
                  }
                }
              ]
            }
          ],
          "passengerTotalFare": {
            "totalFare": 171.6,
            "totalTaxAmount": 38.58,
            "currency": "USD",
            "baseFareAmount": 133.02,
            "baseFareCurrency": "USD",
            "equivalentAmount": 133.02,
            "equivalentCurrency": "USD"
          },
          "baggageInformation": [
            {
              "provisionType": "A",
              "airlineCode": "UA",
```

```
                  "segments": [
                    {
                      "id": 0
                    },
                    {
                      "id": 1
                    }
                  ],
                  "allowance": {
                    "ref": 1
                  }
                }
              ]
            }
          }
        ],
        "totalFare": {
          "totalPrice": 171.6,
          "totalTaxAmount": 38.58,
          "currency": "USD",
          "baseFareAmount": 133.02,
          "baseFareCurrency": "USD",
          "equivalentAmount": 133.02,
          "equivalentCurrency": "USD"
        }
      }
    }
  ],
  "itinGrp": 0
}
```


USE CASE 2 (*Bargain Finder Max request and response for round-trip itinerary with ATPCO offer returned.)*

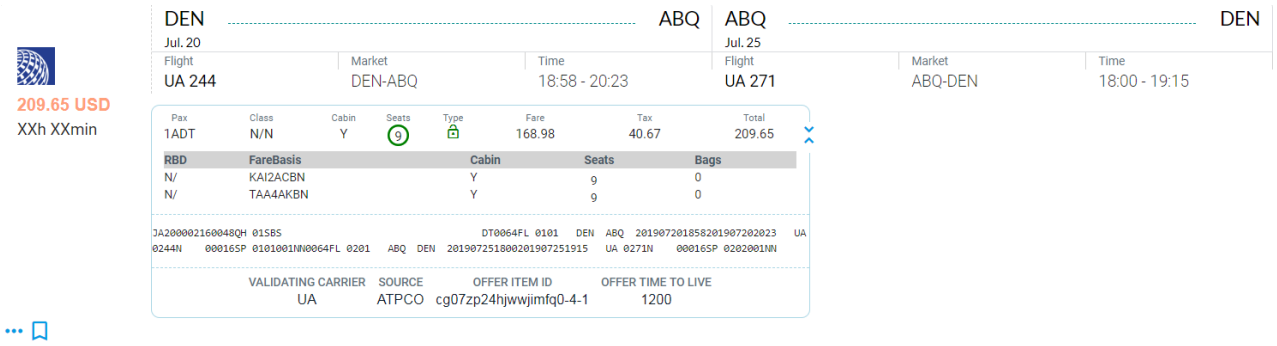
OTA BFM JSON sample request:


```
{
  "OTA_AirLowFareSearchRQ": {
    "Version": "2",
    "POS": {
      "Source": [
        {
          "PseudoCityCode": "PCCX",
          "RequestorID": {
            "Type": "1",
            "ID": "1",
```

```
          "CompanyName": {
            "Code": "TN"
          }
        }
      }
    ]
  },
  "OriginDestinationInformation": [
    {
      "RPH": "1",
      "DepartureDateTime": "2020-07-20T00:00:00",
      "OriginLocation": {
        "LocationCode": "DEN"
      },
      "DestinationLocation": {
        "LocationCode": "ABQ"
      }
    },
    {
      "RPH": "2",
      "DepartureDateTime": "2020-07-25T00:00:00",
      "OriginLocation": {
        "LocationCode": "ABQ"
      },
      "DestinationLocation": {
        "LocationCode": "DEN"
      }
    }
  ],
  "TravelPreferences": {
    "TPA_Extensions": {
      "NumTrips": {
        "Number": 10
      },
      "DataSources": {
        "NDC": " Disable ",
        "ATPCO": "Enable",
        "LCC": "Disable"
      },
      "PreferNDCSourceOnTie": {
        "Value": true
      }
    }
  },
  "TravelerInfoSummary": {
    "AirTravelerAvail": [
      {
        "PassengerTypeQuantity": [
          {
            "Code": "ADT",
            "Quantity": 1
```

```
            }
          ]
        }
      ]
    },
    "TPA_Extensions": {
      "IntelliSellTransaction": {
        "RequestType": {
          "Name": "200ITINS"
        }
      }
    }
  }
}
```


ATPCO Sample response:



GIR JSON Sample:


```
{
  "id": 4,
  "pricingSource": "ADVJR1",
  "legs": [
    {
      "id": 7,
      "schedules": [
        {
          "ref": 20
        }
      ]
    },
    {
      "id": 11,
      "schedules": [
        {
          "ref": 5
        }
```

```
      ]
    }
  ],
  "pricingInformation": [
    {
      "pricingSubsource": "MIP",
      "offer": {
        "offerId": "cg07zp24hjwwjimfq0-4",
        "timeToLive": 1200,
        "source": "ATPCO"
      },
      "fare": {
        "validatingCarrierCode": "UA",
        "vita": true,
        "eTicketable": true,
        "lastTicketDate": "2020-06-15",
        "governingCarriers": "UA UA",
        "passengerInfoList": [
          {
            "passengerInfo": {
              "offerItemId": "cg07zp24hjwwjimfq0-1-1",
              "mandatoryInd": true,
              "serviceId": "cg07zp24hjwwjimfq0-1-1-1",
              "passengerType": "ADT",
              "passengerNumber": 1,
              "nonRefundable": true,
              "fareComponents": [
                {
                  "ref": 4,
                  "segments": [
                    {
                      "segment": {
                        "bookingCode": "N",
                        "cabinCode": "Y",
                        "mealCode": "R",
                        "seatsAvailable": 9,
                        "availabilityBreak": true
                      }
                    }
                  ]
                },
                {
                  "ref": 3,
                  "segments": [
                    {
                      "segment": {
                        "bookingCode": "N",
                        "cabinCode": "Y",
                        "mealCode": "R",
                        "seatsAvailable": 9,
                        "availabilityBreak": true
```

```
          }
        }
      ]
    }
  ],
  "taxes": [
    {
      "ref": 5
    },
    {
      "ref": 10
    },
    {
      "ref": 4
    },
    {
      "ref": 7
    },
    {
      "ref": 8
    },
    {
      "ref": 6
    },
    {
      "ref": 2
    }
  ],
  "taxSummaries": [
    {
      "ref": 2
    },
    {
      "ref": 7
    },
    {
      "ref": 6
    },
    {
      "ref": 1
    }
  ],
  "currencyConversion": {
    "from": "USD",
    "to": "USD",
    "exchangeRateUsed": 1
  },
  "fareMessages": [
    {
      "type": "X",
      "code": "0",
```

```
                "info": "ASL"
              },
              {
                "type": "N",
                "code": "0",
                "carrier": "UA",
                "info": "NONREF/NOCHGS/NOCBBG/NOASR"
              },
              {
                "type": "W",
                "code": "0",
                "info": "VALIDATING CARRIER - UA"
              },
              {
                "type": "W",
                "code": "0",
                "info": "CAT 15 SALES RESTRICTIONS FREE TEXT
FOUND - VERIFY RULES"
              }
            ],
            "passengerTotalFare": {
              "totalFare": 209.65,
              "totalTaxAmount": 40.67,
              "currency": "USD",
              "baseFareAmount": 168.98,
              "baseFareCurrency": "USD",
              "equivalentAmount": 168.98,
              "equivalentCurrency": "USD",
              "constructionAmount": 168.98,
              "constructionCurrency": "USD",
              "commissionPercentage": 0,
              "commissionAmount": 0,
              "exchangeRateOne": 1
            },
            "baggageInformation": [
              {
                "provisionType": "A",
                "airlineCode": "UA",
                "segments": [
                  {
                    "id": 0
                  }
                ],
                "allowance": {
                  "ref": 2
                }
              },
              {
                "provisionType": "A",
                "airlineCode": "UA",
                "segments": [
```

```
                    {
                      "id": 1
                    }
                  ],
                  "allowance": {
                    "ref": 2
                  }
                }
              ]
            }
          }
        ],
        "totalFare": {
          "totalPrice": 209.65,
          "totalTaxAmount": 40.67,
          "currency": "USD",
          "baseFareAmount": 168.98,
          "baseFareCurrency": "USD",
          "constructionAmount": 168.98,
          "constructionCurrency": "USD",
          "equivalentAmount": 168.98,
          "equivalentCurrency": "USD"
        },
        "validatingCarriers": [
          {
            "ref": 2
          }
        ]
      }
    }
  ],
  "diversitySwapper": {
    "weighedPrice": 20.965
  },
  "itinGrp": 0
}
```

API Reference 3

3.1 The beginner's guide to Air Shopping

What is required in my Shopping Request?

Check the **BFM_Sample_Review** included in the Test Package, for the explanations of each of the required fields in the request.

Looking for the latest features and enhancements to Sabre APIs?

You are in the right place, check the Release Notes.

Sabre APIs currently supports *up to 5* versions of an API.

Check the API Versioning page.

3.2 Schema definitions

For information about parameter types and constraints, please refer to this file **BFM_NDC_REST_Reference** included in the Test Package.

3.3 Parameters introduced to the Request schema

3.3.1 DataSources: *object*

A parameter to choose which content source to drive at the request level. You will be able to drive all content source ATPCO/LCC/NDC, NDC Only, or ATPCO Only, or any combination of them, overriding current default.

ATPCO: *string (the allowed strings are "Enable" and "Disable")*

Enables/Disables ATPCO content to be returned in the shopping response.

Defualt value is "Enable"

LCC: *string*

Enables/Disables LCC content to be returned in the shopping response.

Defualt value is "Disable"

NDC: *string*

Enables/Disables 'default' NDC content to be returned in the shopping response.

Defualt value is "Disable"

PreferNDCSourceOnTie/@Value: *boolean* **(required)**

Select the NDC content source in case of identical offers (i.e. O&D, dates, times, flight and same price) returned from ATPCO and NDC content sources, this will avoid duplicated content.

Example: "Value": true

MultipleSourcePerItinerary/@Value: *boolean* **(required)**

Combines solutions from different services, sources as additional fares. You can specify what to do if the same journey is returned from ATPCO and NDC source path. In case of the same price the PreferNDCSourceOnTie value will decide. With this attribute, you can tell, show me everything, combine ATPCO and NDC fares as additional fares, no matter if the same price or not.

Example: "Value": true

NDCIndicators:

The NDC specific section, to nest attributes unique only for the NDC path. The other new attributes and functionalities presented in this release and listed below, fall under this section.

NDCIndicators/MaxNumberOfUpsells/@Value: *boolean* **(required)**

New parameter to limit the number of upsells solutions presented in the response.

Example: "Value": 5

NOTE: Default value is equal "0". If not present, the standard BFM LowFareSearch logic applies. Works only with MultipleBrandedFares enabled.

NDCIndicators/SingleBrandedFare/@Value: *boolean* **(required)**

New parameter to request "branded options per itinerary" - branded description, which for the NDC offers is equivalent to the price class information. Each returned offer will be decorated with price class information if provided by the supplier.

Example: "Value": true

NOTE: Works only with MultipleBrandedFares enabled.

NDCIndicators/MultipleBrandedFares/@Value: *boolean* **(required)**

New parameter to request multiple additional fares (upsells) for each NDC sourced itineraries. Shopping returns multiple fare options with brands/price classes associated with each. The number of the returned options depends only on the carrier providing those and can be limited by separate request attribute.

Example: "Value": true

NOTE: Without this attribute, only the lowest fare is returned.

NDCIndicators/ParityMode/@Mode: *boolean* **(required)**

New parameter to control what type of combination of the price classes are allowed in multi-leg journeys. "Leg" is the default mode and allows any combination of price classes. "Itin" allows only offers with the same price class used across the whole journey (all legs).

Example: "Mode": "Leg"

NOTE: Leg relates to a single O&D portion of travel including all connections.

NDCIndicators/CarrierSpecificQualifiers: *complexType*

Carrier specific qualifiers for NDC content only. If an attribute is specified in both, this and the general section described below, the general qualifier will be overwritten with the carrier-specific value. This object includes the carrier code attribute (required), maximum 1 account code, and multiple Qualifier.

Example:

```
{
    "NDCIndicators": {
        "CarrierSpecificQualifiers": [
            {
                "CarrierCode": "YY",
                "AccountCode": {
                    "Code": "TST01"
                },
                "Qualifier": [{
                    "Name": "ABN",
                    "Value": 12345678901
                }]
```

NDCIndicators/Qualifier: *complexType*

NDC specific qualifiers, general section. To be applied for all NDC content, without CarrierSpecific override.
The use of a qualifier requires to input Name and Value.

Example:

```
{
        "NDCIndicators": {
                "Qualifier": [{
                        "Name": "QCI",
                        "Value": "XYZ"
                }]
```

NOTE: Currently supported qualifiers are: ABN and QCI.

NOTE: In the future, new qualifiers will be included also under this section.

NOTE: The ABN and QCI qualifiers are not allowed to be used together, but they don't require an associated Account Code.

NOTE: Schema snippets for all new parameters are available in the Release Notes and full schema documentation (Swagger) is available at [Sabre Developer Studio](#).

Example of an Offer request for NDC content only:

```
},
"DataSources": {
       "NDC": "Enable",
       "ATPCO": "Disable",
       "LCC": "Disable"
}
```

3.4 Parameters introduced to the Response schema

3.4.1 Offer: *object*

An Offer that contains NDC, ATPCO, or LCC Offer data.

offerId: *string* **(required)**

The unique identifier of an Offer within the context of one message. An OfferId is assigned to an itinerary's price point.

Example: "cdjnxalks":

timeToLive (~~ttl~~): *integer* **(required)**

Time to Live in minutes. Specifies how log an offer is stored, currently the timeToLive (~~TTL~~) for all offers is at most 1200 seconds but can be shorter if the NDC provider will limit the time of the offer.

Example: 1200

NOTE: In the new release (/v2/offers/shop), the parameter name has been changed to timeToLive and the value is displayed now in seconds. Pattern: "^[0-9] $" Example : "1200"'.

source: *string,* must match (ATPCO)|(LCC)|(NDC) (**required)**

Example: NDC, ATPCO, LCC

offerItemId: *string*

The unique identifier of the OfferItem instance. OfferItem is a priceable chunk of services.

Example: "cdjnxalksm0-1-1"

NOTE: Now the offerItemId is returned at the passengerInfo level for most of the NDC content providers, however the previous section (fare level) remains valid as well.

serviceId: *string*

The unique identifier of a service within the context of one message. A service is a feature/service included in a given flight.

Example: "cdjnxalksm0-1-1-1"

NOTE: Now the serviceId is returned at the passengerInfo level for most of the NDC content providers, however the previous section (fare level) remains valid as well.

mandatoryInd: *boolean* **(required)**

When set to 'true' indicates mandatory Offer Items, which cannot be removed from the Offer. Mandatory Offer Item transition into Order Items. If not present or 'false', the Offer item is optional.

Example: "true":

NOTE: This parameter can be returned in two sections of the response, at fare and passengerInfo level, depending on which level the Offer is returned.

elapsedTime: *integer*

This information allows customers to display travel time for NDC Offers. The value is displayed in minutes.

Example: " 390"

NOTE: This parameter is present at scheduleDescs and legDescs level. It is available on both, NDC and ATPCO path.

NumberOfOccurences: *positiveInteger*

The message count to inform if the message occurs more than once. Some of the messages from NDC providers are duplicated, parameter provides their number to decrease the payload of duplicated messages.

Example: "@NumberOfOccurences": "0"

NOTE: Schema snippets for all new parameters are available in the Release Notes and full schema documentation (Swagger) is available at [Sabre Developer Studio](#).

Below a snipped from the Offer node in the BFM GIR JSON, for ATPCO content offer. Currently the ATPCO Time To Live is set to 1200 seconds.

```
"pricingInformation": [
    {
      "pricingSubsource": "MIP",
      "offer": {
        "offerId": "cg07zp24hjwwjimfq0-4",
        "timeToLive": 1200,
        "source": "ATPCO"
      },
      "fare": {
        "offerItemId": "cg07zp24hjwwjimfq0-4-1",
        "validatingCarrierCode": "UA",
        "vita": true,
        "eTicketable": true,
        "lastTicketDate": "2020-06-15",
        "governingCarriers": "UA UA",
        "serviceId": "cg07zp24hjwwjimfq0-4-1-1",
[…]
```

Below a snipped from the Offer node in the BFM GIR JSON, for ATPCO content offer. Currently the NDC Time To Live is set to 1140 seconds.

```
"pricingInformation": [
    {
      "pricingSubsource": "NDC_CONNECTOR",
      "offer": {
        "offerId": "cg07zp24hjwwjimfq0-1",
        "timeToLive": 1140,
```

```
        "source": "NDC"
      },
      "fare": {
        "offerItemId": "cg07zp24hjwwjimfq0-1-1",
        "validatingCarrierCode": "UA",
        "eTicketable": true,
        "serviceId": "cg07zp24hjwwjimfq0-1-1-1",
[…]
```

3.5 NDC Supported Features

***Timelines and estimates are subjected to change - *This Table is not up-to-date as of 2020, update to be delivered. ***

BFM FEATURES	SUPPORTED FOR ATPCO	SUPPORTED FOR NDC	NDC UN-BLOCK PRIORITY
Account Code / Corporate Id	Yes	Yes	SUPPORTED
Agency Retailer	Yes	No	DOESN'T BLOCK NDC CONTENT
Air Extras	Yes	No	DOESN'T BLOCK NDC CONTENT
Air Streaming	Yes	3Q19	DOESN'T BLOCK NDC CONTENT
Alternate Cities	Yes	No	1Q20
Alternate PCC / Shop Across Multiple PCCs Mode 1	Yes	No	4Q19
Alternate PCC / Shop Across Multiple PCCs Mode 2	Yes	No	4Q19
Alternate PCC / Shop Across Multiple PCCs Mode 3	Yes	No	4Q19
Alternative Dates	Yes	Yes	1Q20
Anchored Search	Yes	No	BLOCKS NDC CONTENT
Apply Ob Ticketing Fees	Yes	3Q19	DOESN'T BLOCK NDC CONTENT
Baggage Allowance and Charges (INFO)	Yes	Yes	DOESN'T BLOCK NDC CONTENT
Baggage Allowance (RequestedPiece INFO)	Yes	Yes	DOESN'T BLOCK NDC CONTENT
Baggage Free Piece Required (Filter)	Yes	4Q19	BLOCKS NDC CONTENT
Branded Fares (multiple brands)	Yes	Yes	DOESN'T BLOCK NDC CONTENT
Branded Fares (single brand)	Yes	Yes	DOESN'T BLOCK NDC CONTENT
Branded Fares (T166)	Yes	No	DOESN'T BLOCK NDC CONTENT
Branded Fares Brand Filters (Brand ID)	Yes	4Q19	BLOCKS NDC CONTENT
Cabin Preference	Yes	4Q19	DOESN'T BLOCK NDC CONTENT
Cache	Yes	No	N/A
Changes and Refunds Filters	Yes	4Q19	BLOCKS NDC CONTENT
Changes and Refunds Request INFO	Yes	4Q19	DOESN'T BLOCK NDC CONTENT
Code Share Flights (exclude/keep onlines)	Yes	No	BLOCKS NDC CONTENT
Commision Code Qualifier	Yes	No	DOESN'T BLOCK NDC CONTENT

Connection Locations (preferred)	Yes	No	DOESN'T BLOCK NDC CONTENT
Connection Locations (required/excluded)	Yes	No	4Q19
Connection Point	Yes	No	4Q19
Connection Time	Yes	No	4Q19
Connection Max Connections	Yes	No	DOESN'T BLOCK NDC CONTENT
Connection Max Stops	Yes	No	DOESN'T BLOCK NDC CONTENT
Currency Code Override	Yes	Yes	SUPPORTED
Directionality	Yes	No	N/A
Exchange	Yes	No	BLOCKS NDC CONTENT
Exclude Call Direct Carriers	Yes	No	DOESN'T BLOCK NDC CONTENT
Exclude Via Country	Yes	No	BLOCKS NDC CONTENT
Exempt Tax	Yes	No	BLOCKS NDC CONTENT
Fare Basis	Yes	No	BLOCKS NDC CONTENT
Fare Focus Rules	Yes	No	DOESN'T BLOCK NDC CONTENT
Fare Type	Yes	No	BLOCKS NDC CONTENT
Force Companion	Yes	No	BLOCKS NDC CONTENT
Frequent Flyer	No	3Q19	NATIVLY SUPPORTED BY NDC
Governing Carrier Override	Yes	No	BLOCKS NDC CONTENT
Validating Carrier (include and exclude)	Yes	No	BLOCKS NDC CONTENT
Include/Exclude Low Cost Carriers	Yes	No	DOESN'T BLOCK NDC CONTENT
Inhibit Split PNR option	Yes	No	DOESN'T BLOCK NDC CONTENT
Jump Cabin	Yes	No	DOESN'T BLOCK NDC CONTENT
Keep Same Cabin	Yes	No	DOESN'T BLOCK NDC CONTENT
Long Connect	Yes	No	4Q19
Multiple Fares By Itinerary	Yes	4Q19	DOESN'T BLOCK NDC CONTENT
Multi-Ticket (SOW)	Yes	4Q19	DOESN'T BLOCK NDC CONTENT
Multi-Ticket (SCHS)	Yes	No	1Q20
Multi-Ticket (GOW2RT)	Yes	No	1Q20
NDC Configuration (enable/disable ATPCo)	Yes	Yes	SUPPORTED
NDC Configuration (enable/disable LCC)	Yes	Yes	SUPPORTED
NDC Configuration (enable/disable NDC)	Yes	Yes	SUPPORTED
NDC Configuration (select preferred source for tie)	Yes	Yes	SUPPORTED
NDC Configuration (store non-NDC offers)	Yes	Yes	SUPPORTED
NDC Limitations (more than two legs)	Yes	No	DOESN'T BLOCK NDC CONTENT
NDC Limitations (only one leg)	Yes	No	DOESN'T BLOCK NDC CONTENT
NDC Limitations (passanger count > 1)	Yes	No	BLOCKS NDC CONTENT
NDC Limitations (passanger type not ADT)	Yes	No	BLOCKS NDC CONTENT
NDC Limitations (two legs)	Yes	No	DOESN'T BLOCK NDC CONTENT
Negotiated Fares Only	Yes	4Q19	DOESN'T BLOCK NDC CONTENT
New Diversity Model	Yes	No	DOESN'T BLOCK NDC CONTENT
Online Fares	Yes	No	DOESN'T BLOCK NDC CONTENT

Overnight Connections Exclusion	Yes	No	1Q20
Point Of Ticketing Override	Yes	No	1Q20
POS Override	Yes	No	1Q20
Preferred Carrier (Vendor preferences)	Yes	Yes	SUPPORTED
Private Fares Only	Yes	4Q19	DOESN'T BLOCK NDC CONTENT
Public Fares Only	Yes	4Q19	DOESN'T BLOCK NDC CONTENT
ResTicketing	Yes	No	BLOCKS NDC CONTENT
Revalidate Itinerary	Yes	No	BLOCKS NDC CONTENT
Routing	Yes	No	BLOCKS NDC CONTENT
Settlement Validation	Yes	No	BLOCKS NDC CONTENT
Shop Across Passenger Types	Yes	No	BLOCKS NDC CONTENT
Shop by Alliance	Yes	No	4Q19
Shop by Class of Service	Yes	No	4Q19
Shop for Additional Non-Stops	Yes	No	DOESN'T BLOCK NDC CONTENT
Spanish Family Discount	Yes	No	BLOCKS NDC CONTENT
Stopover	Yes	1Q20	BLOCKS NDC CONTENT
Through Fares Only	Yes	No	BLOCKS NDC CONTENT
Time Window (Arrival)	Yes	No	DOESN'T BLOCK NDC CONTENT
Time Window (Departure)	Yes	No	DOESN'T BLOCK NDC CONTENT
Total Travel Time	Yes	1Q20	BLOCKS NDC CONTENT
Use Negotiated Fares	Yes	No	DOESN'T BLOCK NDC CONTENT
Use Passenger Fares	Yes	No	DOESN'T BLOCK NDC CONTENT
Validating Carrier Without BSP Check	Yes	No	BLOCKS NDC CONTENT
Web Fare	Yes	No	DOESN'T BLOCK NDC CONTENT
XO Fares	Yes	No	DOESN'T BLOCK NDC CONTENT
ElapsedTime	4Q19	4Q19	DOESN'T BLOCK NDC CONTENT
Time zone	Yes	4Q19	DOESN'T BLOCK NDC CONTENT

• • •

Error Messages and Status Codes

4

4.1 Introduction API Specific Errors

Bargain Finder Max

#	Error	Cause	Resolution
1	No Availability	Either your PCC is not enabled to consume BFM or the tier level (50, 100, 200) you specified does not match your BFM agreement.	1. Ensure your PCC is enabled to consume BFM. Contact your Sabre account manager to validate if your PCC has been configured to consume BFM. 2. Adjust the BFM tier level to the appropriate one according to your BFM agreement.
2	NO FLIGHT SCHEDULES FOR QUALIFIERS USED	No flights results could be found with the qualifiers used in your request.	Review the qualifiers used on your request to ensure those are not overly-restrictive – Example, requesting non-stop flights in a route where non-stop flight do not operate.
3	Communication error code=104: Connection reset by peer	Temporary internal processing error.	1. Retry your request. 2. Contact Sabre support if error persists.
4	Communication error: Transmission timeout	Temporary internal processing error.	1. Retry your request. 2. Contact Sabre support if error persists.
5	DSF server returned an error: Insufficient resources to process the request	Temporary internal processing error.	1. Retry your request. 2. Contact Sabre support if error persists.
6	MAX NBR COMBINATIONS EXCEEDED	Temporary internal processing error.	1. Retry your request. 2. Contact Sabre support if error persists.

4.1 NDC APIS Error Messages

For a complete list of the errors for each NDC API please see the following Dev Studio location:

https://beta.developer.sabre.com/guides/travel-agency/reference/errors#/offers/price

4.2 REST APIS Common errors

REST APIs: Verify your token credentials were set-up correctly.

#	HTTP Status Code	Message	Text	Resolution
1	400	Bad Request	Invalid format for request	1. Verify your request includes valid parameters or values. 2. Verify the grant_type in the request payload.
2	400		ERR.2SG.CLIENT.INVALID_REQUEST	Verify your request includes valid parameters or values. Check API documentation.
3	401	Unauthorized	Not authorized to make this request. Check access level and refer to API documentation for access information.	Verify your token credentials.
4	401	Unauthorized	invalid_client	Verify your token credentials.

#	HTTP Status Code	Message	Text	Resolution
5	401	Unauthorized	Credentials are missing or the syntax is not correct	Verify your base64-encoded token credentials were constructed properly.
6	401	Unauthorized	Wrong clientID or clientSecret	Verify password for the client ID.
7	401	Unauthorized	ERR.2SG.SEC.MISSING_CREDENTIALS	Verify you are using the correct data type.
8	401	Unauthorized	ERR.2SG.SEC.INVALID_CREDENTIALS	Verify your token credentials.
9	403	Forbidden	Request is for a resource that is forbidden	1. Verify your token credentials allow authorization to call this API. 2. Contact your Sabre account manager to verify access.
10	403		ERR.2SG.SEC.NOT_AUTHORIZED	1. Verify your token credentials allow authorization to call this API. 2. Contact your Sabre account manager to verify access.

#	HTTP Status Code	Message	Text	Resolution
11	403		ERR.2SG.CLIENT.SERVICE_UNKNOWN	1. Verify URL is valid. 2. Verify whether your request is required segments, such as a version number. Check API documentation.
12	404	Not Found	Response does not contain any data	1. No data found to fulfill the request. You might to consider using fewer parameters/filters. 2. URL has missing segments, such as a version number. Check API documentation. 3. Verify URL is valid. Check API documentation.
13	405	Method Not Allowed		Method is not valid or authorized for this endpoint. Check API documentation.

#	HTTP Status Code	Message	Text	Resolution
14	406	Not Acceptable	Requested resource is only capable of generating content not acceptable according to the Accept headers sent in the request.	
15	413		ERR.2SG.CLIENT.INVALID_REQUEST	1. Request URL too long. 2. Reduce the number of request parameters in the URL. Separate parameters into multiple requests.
16	413	FULL head		1. Request URL too long. 2. Reduce the number of request parameters in the URL. Separate parameters into multiple requests.
17	429	too many requests	temporarily_unavailable	1. Internal limit has been exceeded. 2. Wait at least 500 milliseconds and resend the request.

#	HTTP Status Code	Message	Text	Resolution
18	429	Throttled	Active token count is exceeded	1. Maximum number of concurrent requests for the API have been exceeded. Contact your Sabre account manager to determine or increase your allocated concurrent request limit for this API. 2. Wait at least 500 milliseconds and resend the request.
19	429		ERR.2SG.GATEWAY.REQUEST_THROTTLED	1. Maximum number of concurrent requests for the API have been exceeded. Contact your Sabre account manager to determine or increase your allocated concurrent request limit for this API. 2. Wait at least 500 milliseconds and resend the request.

#	HTTP Status Code	Message	Text	Resolution
20	500	Server Error		1. API encountered an unexpected condition that prevented it from fulfilling the client's request. 2. Wait at least 500 milliseconds and resend the request.
21	500		ERR.2SG.SEC.INTERNAL_PROCESSING_ERROR	1. API encountered an unexpected condition that prevented it from fulfilling the client's request. 2. Wait at least 500 milliseconds and resend the request.
22	500		ERR.2SG.GATEWAY.TIMEOUT	Wait at least 500 milliseconds and resend the request.
23	500		ERR.2SG.GATEWAY.INTERNAL_PROCESSING_ERROR	Wait at least 500 milliseconds and resend the request.

#	HTTP Status Code	Message	Text	Resolution
24	500		ERR.2SG.GATEWAY.INVALID_PROVIDER_RESPONSE	1. The server cannot understand the response of the service because of bad format or failure to comply with protocol. Contact the Sabre support desk. 2. Wait at least 500 milliseconds and resend the request.
25	500		ERR.2SG.GATEWAY.PROVIDER_CONNECTION_ERROR	1. Your request encountered a transport error. 2. Wait at least 500 milliseconds and resend the request.
26	503	Service Unavailable	Server is currently unavailable. Please try again later and report if problem persists.	Wait at least 500 milliseconds and resend the request.
27	504	Gateway Timeout	Server timed out trying to fulfill request. Please try again later and report if problem persists.	Wait at least 500 milliseconds and resend the request.

4.3 Status Codes

RESTful services use HTTP status codes to provide the result status of the executed service. For example, 200 for success, 404 when a resource is not found.

HTTP status codes are defined by section 10 of RFC 2616, the Internet Assigned Numbers Authority (IANA) maintains the official registry of HTTP status codes.

Range	Meaning
2xx	Successful operation. Indicates that a request was successful, of which can succeed in multiple ways.
4xx	Client-side error. Usually, it indicates that there was a problem with the data sent in the request, but can also indicate infrastructure-related issues, e.g. authentication, throttling. In most cases the client can modify their request and resubmit.
5xx	Server-side error. Indicates a valid request was sent by the client, but it could not be processed due to software defects or external conditions like downline system unavailability. 5xx range status codes should not be utilized for validation or logical error handling.

Glossary

Term	Description
2SG	2nd Generation Services Gateway
ATPCO	Airline Tariff Publishing Company
BFM	Bargain Finder Max
IATA	International Air Transport Association
NDC	New Distribution Capability, IATA xml communication standard.
OTA	Online Travel Alliance
USG	Universal Service Gateway