



Parkmobile
PARKING MADE SIMPLE™

NForce API
Interface reference

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NForce API Interface reference

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Revision History

Revision	Date	Author	Description
1.0	9/24/2012	HJ Meulekamp	Initial start of document
1.1	2/7/2013	B Hodges	Added External Parking Right resource
1.2	7/17/2013	B Hodges	Added Zones resource
1.3	1/13/2015	B Hodges	Updated the Error code for 404 HTTP status code
1.4	8/3/2016	TJ Yan	Added customfield1 & 2, and updated sample datetime data.

Introduction

Product Overview

The nForce API was designed to allow parking transactions to be accessed or viewed by internal and external systems by various means (i.e., by 3rd party systems, Parkmobile's enforcement user interface). The API is the foundation of Parkmobile's enforcement information. Currently, Parkmobile has a system in place that utilizes the nForce service to "push" parking transactions to a 3rdparty's system. It is also used within the Mobile enforcement user interface that is provided by Parkmobile for suppliers who do not already have an enforcement solution. Parkmobile allows 3rd parties to consume this service so that they can "pull" parking transactions from the Parkmobile system into their own system.

The NForce API service described in this document is a partially rebuild of the existing Nforce SOAP service. It is based on REST principles, which means it's very easy to write and test applications. You can use your browser to access URLs, and you can use pretty much any HTTP client in any programming language to interact with the API.

The API supports several data formats, JSON, XML and SOAP messaging.

Nforce API service interface

Base URL

Test and development

<https://staging01.parkmobile.us/nforceapi/>

Production

<https://api.parkmobile.us/nforceapi/>

Security

HTTP/HTTPS

All traffic will be over HTTPS. HTTP will be disabled on production and staging environment.

Credentials

All requests to the API require authentication. A user will be identified by an username and password combination. For username/password authentication we will use [HTTP Basic auth](#).

Credentials will be issues by Parkmobile per platform per integration (testing & staging, production).

Please note that the ParkingRight and ExternalParkingRight resources require separate credentials.

Request Formats

The Nforce API only exposes queries through HTTP query strings.

Response Formats

The response format is JSON by default and can be overridden by the query string format parameter or setting the Accept header.

By Query string

- ?format=json
- ?format=xml
- ?format=csv
- ?format=html

By accept header:

- Accept: application/json
- Accept: application/xml

As you can see, this approach only works with json and xml.

Possible GET Response Status codes

- **200 OK:** The request was successful and the response body contains the representation requested.
- **304 NOT MODIFIED:** Your client's cached version of the representation is still up to date.
- **400 BAD REQUEST:** The data given by parameters failed validation. Inspect the query string parameters for details.
- **401 UNAUTHORIZED:** The supplied credentials, if any, are not sufficient to access the resource.
- **404 NOT FOUND:** No parking rights found for zone/lpn/space.
- **500 SERVER ERROR:** We couldn't return the representation due to an internal server error.

If-Modified-Since HTTP header

The webservice supports the use of the If-Modified-Since header. Using this header the client can indicated on which date time the last query was done and if there are modifications since that time stamp (UTC date). If the data for that exact query did not change a 304 status code without a body will be returned. If there are changes a 200 status code with body containing the requested response will be returned, including a Last-Modified header which should be used on subsequent requests in the If-Modified-Since header.

Since this is basic browser behavior testing the service using a browser will automatically make use of the If-Modified-Since and Last-Modified header.

Using the headers can be an effective way to reduce data transport when the exact same query is being replayed in short intervals (For example zone range scan repeated every 2 minutes).

Accept-Encoding: GZIP content compression

For larger implementations where queries can result in larger data sets using the Accept-Encoding header can be another efficient way to reduce the amount of bytes being returned. GZIP encoding will kick in only when the client set the accept-encoding header and the returned body size is over a server-side configurable thresh-hold.

Authentication

The API requires authentication through basic authentication. All resources on the API require authentication.

Basic authentication is described in [HTTP Basic auth](#).

All API request which require authentication and which are called without using one of the authenticate options will return HTTP status code **401 Unauthorized**.

The in Phonixx configured lockout policy is applied. When a user is locked any authenticated resources where a user tries to login with basic authentication will return HTTP status code **403 Access denied**, with description set to reason: Your account is locked.

Resources

Parkingright

The following resources are available

1. Parkingright

Parkingrights can be queried by multiple uris.

Resource URIs

Uri	Methods	Remarks
/parkingrights/vehicle/{VehicleLpn}	GET	UrlEncoded if necessary
/parkingrights/zone/{SignageZoneCode}	GET	
/parkingrights/zone/{SignageZoneCode}/{SpaceNumber}	GET	
/parkingrights/zones/{SignageZoneCodeFrom}/{SignageZoneCodeTo}	GET	Note: zones with s ,
/parkingrights/zone/{SignageZoneCode}/{SpaceNumberFrom}/{SpaceNumberTo}	GET	
/parkingright/{ParkingRightId}	GET	Note: parkingright, without s
	GET	

Resource properties

A parking right is represented by the following properties:

Property	Description	DataType	Remarks
ParkingRightId	Unique ID identifying a parking right	int	
SignageZoneCode	On street signage zone code	string	
InternalZoneCode	Internal unique zone code	string	
SupplierId	Unique ID identifying supplier (location asset owner in Parkmobile system)	Int	
Lpn	Vehicle license plate number	String	
LpnState	Two letter vehicle license plate state code	String	
StartDateLocal	Start time of transaction ,Datetime, local to location of	DateTime ISO 8601 format	

Property	Description	DataType	Remarks
	zone		
EndDateLocal	End time of transaction, Datetime, local to location of zone	Optional, DateTime ISO 8601 format	Start-stop transaction will not have an end date when not yet stopped.
ProductDescription	Description of product	String	
SpaceNumber	Space number	String	optional
TimeZone	Time zone name	String	
Permit	Permit ID	String	Only for permixx
ModifiedDate	Modified time of transaction, Datetime, local to location of zone	Optional, DateTime ISO 8601 format	Its modified when extend or stopped
PayedMinutes	Number of minutes paid parking (onstreet parking)	Int	
PurchaseAmount	Dollar value of transaction	decimal	
ProductTypeID	Id identifying type	int	
CreatedDateLocal	Create time of transaction, Datetime, local to location of zone	Optional, DateTime ISO 8601 format	
CustomField1	ZONE_SUPPLIER_CODE	string	
CustomField2	ZONE_SUPPLIER_SHORT_CODE	string	

All responses will wrap the list of returned parking rights into a response resource:

Property	Description	DataType	Remarks
ResultTimeStampLocal	Result date time stamp	Datetime	
ParkingRights	List/array of found parkingrights	Parking right resource	
TotalCount	Total number of results	int	
ErrorMessage	Error message	String	
ResultCount	Number of results in this response	int	

Resource Query string parameters

Some extra query string parameters have been implemented which can be used on the API to control the number of results returned (Parking rights will in these cases always be ordered ascending on StartDateLocal field:

- **Page and PageSize**
 - Two integer values which can be used to page through a list of parking rights. (Page is 1 based)
- **MaxResults**
 - Set a hard limit on maximum number of parking rights being returned.
- **LastUpdateLocal**
 - Tells the service on which time the last update was done. Only newer and modified parking rights will be retrieved. Not that for this operation the client pulling data should be closed to completely in time-sync with a NTP timeserver or use the ResultTimeStampLocal field from previous response to set the last update date time.

One more query string parameter has been implemented which should only be used for testing and problem resolving purposes:

- **ScanDateLocal**
 - Date time of scan. As in all other dates local means local time zone to the location of the supplier, zone code locations.

HTTP GET

Example JSON

```
/nforceapi/parkingrights/zones/1/99999
```

Header:

Authorization: Basic bXl1c2VybmFtZTpteXBhc3N3b3Jk

Accept: application/json

Accept-Encoding: gzip,deflate,sdch

If-Modified-Since: Mon, 24 Sep 2012 19:22:34 GMT

HTTP/1.1 200 OK

Content-Type: application/json

Last-Modified: Mon, 24 Sep 2012 19:20:34 GMT

Date: Mon, 24 Sep 2012 19:27:32 GMT

```
{
  "resultTimeStampLocal": "\2012-09-24T15:27:32.9333718\\"",
  "parkingRights": [
    {
      "parkingRightId": 3207571,
      "signageZoneCode": "22250",
      "internalZoneCode": "22250",
      "supplierId": 758021,
      "lpn": "hjm890",
      "lpnState": "GA",
      "startDateLocal": "2012-09-24T15:23:32.9200000",
      "endDateLocal": "2012-09-24T15:56:32.9200000",
      "productDescription": "Cashless Parking",
      "spaceNumber": "",
      "timeZone": "Eastern Standard Time",
      "permit": "",
      "modifiedDate": "2012-09-24T15:23:34.0330000",
      "payedMinutes": 33,
      "purchaseAmount": 1.10,
      "productId": 1
    }
  ],
  "totalCount": 1,
  "resultCount": 1
}
```

Example XML

/nforceapi/parkingrights/zones/1/99999

Header:

Authorization: Basic bXl1c2VybmFtZTpteXBhc3N3b3Jk

Accept: application/xml

Accept-Encoding: gzip,deflate,sdch

If-Modified-Since: Mon, 24 Sep 2012 19:22:34 GMT

HTTP/1.1 200 OK

Content-Type: application/xml

Last-Modified: Mon, 24 Sep 2012 19:20:34 GMT

Date: Mon, 24 Sep 2012 19:30:23 GMT

```
<ParkingRightsResponse xmlns:i="http://www.w3.org/2001/XMLSchema-instance"
xmlns="urn:parkmobile/nforce/v2/model"><ErrorMessage i:nil="true" /><Page i:nil="true"
/><ParkingRights><ParkingRight><CreateDateLocal i:nil="true" /><EndDateLocal>2012-09-
24T15:56:32.92</EndDateLocal><InternalZoneCode>22250</InternalZoneCode><Lpn>hjm890</Lpn><Lp
nState>GT</LpnState><ModifiedDate>2012-09-
24T15:23:34.033</ModifiedDate><ParkingRightId>3207571</ParkingRightId><PayedMinutes>33</Pay
edMinutes><Permit /><ProductDescription>Cashless
Parking</ProductDescription><ProductId>1</ProductId><PurchaseAmount>1.10</PurchaseA
mount><SignageZoneCode>22250</SignageZoneCode><SpaceNumber /><StartDateLocal>2012-09-
24T15:23:32.92</StartDateLocal><SupplierId>758021</SupplierId><TimeZone>Eastern Standard
Time</TimeZone></ParkingRight></ParkingRights><ResultCount>1</ResultCount><ResultTimeStampl
ocal>"2012-09-
24T15:30:23.8570497"</ResultTimeStampLocal><TotalCount>1</TotalCount></ParkingRightsRespons
e>
```

Zones

The following resources are available

1. Zone

Resource URIs

Uri	Methods	Remarks
/zones	GET	

Resource properties

All responses will wrap the list of returned parking rights into a response resource:

Property	Description	DataType	Remarks
TotalCount	The number of zones returned	int	
Zones	List of Zones	Zone[]	

The Zone object is represented by the following properties:

Property	Description	DataType	Remarks
Description	Result date time stamp	String	
InternalZoneCode	The internal Parkmobile identifier of the zone	int	
LocationCode	The internal Parkmobile identifier of the location (region)	int	
SignageZoneCode	The Parkmobile identifier of the zone. This is the number users enter to specify the zone.	int	
SupplierId	The Parkmobile identifier of the zone's owner	int	

HTTP GET

Example JSON

```
/nforceapi/zones
```

Header:

Authorization: Basic bXl1c2VybmFtZTpteXBhc3N3b3Jk

Accept: application/json

Accept-Encoding: gzip,deflate,sdch

HTTP/1.1 200 OK
Cache-Control: private
Content-Type: application/json; charset=utf-8
Server: Microsoft-IIS/8.0
X-Powered-By: ServiceStack/3.99 Win32NT/.NET
X-AspNet-Version: 4.0.30319
X-Powered-By: ASP.NET
Date: Wed, 17 Jul 2013 13:22:48 GMT
Content-Length: 4227

```
{
  "totalCount": 33,
  "zones": [
    {
      "signageZoneCode": "200000",
      "internalZoneCode": "993200000",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "IPS IPI"
    },
    {
      "signageZoneCode": "990",
      "internalZoneCode": "993990",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "winpark Test"
    },
    {
      "signageZoneCode": "9911",
      "internalZoneCode": "9939911",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Vinings, GA"
    },
    {
      "signageZoneCode": "9912",
      "internalZoneCode": "9939912",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Vinings, GA"
    },
    {
      "signageZoneCode": "9913",
      "internalZoneCode": "9939913",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Vinings, GA"
    },
    {
      "signageZoneCode": "9914",
      "internalZoneCode": "9939914",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Vinings, GA"
    },
    {
      "signageZoneCode": "9915",
      "internalZoneCode": "9939915",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Vinings, GA"
    },
    {
      "signageZoneCode": "9916",
      "internalZoneCode": "9939916",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Liberty PlugIns"
    },
    {
      "signageZoneCode": "9917",
      "internalZoneCode": "9939917",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Liberty PlugIns"
    },
    {
      "signageZoneCode": "9918",
      "internalZoneCode": "9939918",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Liberty PlugIns"
    },
    {
      "signageZoneCode": "9920",
      "internalZoneCode": "9939920",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "ParkTurk Ankara"
    },
    {
      "signageZoneCode": "9921",
      "internalZoneCode": "9939921",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "ParkTurk Ankara"
    },
    {
      "signageZoneCode": "9922",
      "internalZoneCode": "9939922",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "ParkTurk Eskisehir"
    },
    {
      "signageZoneCode": "9923",
      "internalZoneCode": "9939923",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "ParkTurk Eskisehir"
    },
    {
      "signageZoneCode": "9924",
      "internalZoneCode": "9939924",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "ParkTurk Kayseri Havaalani"
    },
    {
      "signageZoneCode": "9925",
      "internalZoneCode": "9939925",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "IPS IPI"
    },
    {
      "signageZoneCode": "9926",
      "internalZoneCode": "9939926",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "IPS IPI"
    },
    {
      "signageZoneCode": "9927",
      "internalZoneCode": "9939927",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Atlanta, GA"
    },
    {
      "signageZoneCode": "9930",
      "internalZoneCode": "9939930",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Liberty PlugIns"
    },
    {
      "signageZoneCode": "9931",
      "internalZoneCode": "9939931",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Liberty PlugIns"
    },
    {
      "signageZoneCode": "9940",
      "internalZoneCode": "9939940",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "9940 At Cobb"
    },
    {
      "signageZoneCode": "9942",
      "internalZoneCode": "9939942",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Amano At Cobb"
    },
    {
      "signageZoneCode": "9943",
      "internalZoneCode": "9939943",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Eval at Cobb"
    },
    {
      "signageZoneCode": "9991",
      "internalZoneCode": "9939991",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Atlanta, GA"
    },
    {
      "signageZoneCode": "99950",
      "internalZoneCode": "99399950",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Galleria 75 Garage"
    },
    {
      "signageZoneCode": "99998",
      "internalZoneCode": "99399998",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "99998 at cobb"
    },
    {
      "signageZoneCode": "999990",
      "internalZoneCode": "993999990",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Cobb 1"
    },
    {
      "signageZoneCode": "999991",
      "internalZoneCode": "993999991",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Cobb 2"
    },
    {
      "signageZoneCode": "999992",
      "internalZoneCode": "993999992",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Cobb 3"
    },
    {
      "signageZoneCode": "999993",
      "internalZoneCode": "993999993",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Cobb 4"
    },
    {
      "signageZoneCode": "999994",
      "internalZoneCode": "993999994",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Cobb 4"
    },
    {
      "signageZoneCode": "999996",
      "internalZoneCode": "993999996",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Atlanta, GA"
    },
    {
      "signageZoneCode": "999997",
      "internalZoneCode": "993999997",
      "supplierId": 993099,
      "locationCode": "993",
      "description": "Cobb Galleria Pkwy"
    }
  ]
}
```

Example XML

/nforceapi/zones

Header:

Authorization: Basic bXl1c2VybmFtZTpteXBhc3N3b3Jk

Accept: application/xml

Accept-Encoding: gzip,deflate,sdch

HTTP/1.1 200 OK
 Cache-Control: private
 Content-Type: application/xml
 Server: Microsoft-IIS/8.0
 X-Powered-By: ServiceStack/3.99 win32NT/.NET
 X-AspNet-Version: 4.0.30319
 X-Powered-By: ASP.NET
 Date: Wed, 17 Jul 2013 13:26:55 GMT
 Content-Length: 6741

```
<ZoneResponse xmlns:i="http://www.w3.org/2001/XMLSchema-instance"
xmlns="urn:parkmobile/nforce/v2/model"><TotalCount>33</TotalCount><Zones><Zone><Description>
>IPS
IPI</Description><InternalZoneCode>993200000</InternalZoneCode><LocationCode>993</LocationCode><SignageZoneCode>200000</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>winpark
Test</Description><InternalZoneCode>993990</InternalZoneCode><LocationCode>993</LocationCode><SignageZoneCode>990</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Vinings,
GA</Description><InternalZoneCode>9939911</InternalZoneCode><LocationCode>993</LocationCode><SignageZoneCode>9911</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Vinings,
GA</Description><InternalZoneCode>9939912</InternalZoneCode><LocationCode>993</LocationCode><SignageZoneCode>9912</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Vinings,
GA</Description><InternalZoneCode>9939913</InternalZoneCode><LocationCode>993</LocationCode><SignageZoneCode>9913</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Vinings,
GA</Description><InternalZoneCode>9939914</InternalZoneCode><LocationCode>993</LocationCode><SignageZoneCode>9914</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Vinings,
GA</Description><InternalZoneCode>9939915</InternalZoneCode><LocationCode>993</LocationCode><SignageZoneCode>9915</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Liberty
PlugIns</Description><InternalZoneCode>9939916</InternalZoneCode><LocationCode>993</LocationCode><SignageZoneCode>9916</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Liberty
PlugIns</Description><InternalZoneCode>9939917</InternalZoneCode><LocationCode>993</LocationCode><SignageZoneCode>9917</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Liberty
PlugIns</Description><InternalZoneCode>9939918</InternalZoneCode><LocationCode>993</LocationCode><SignageZoneCode>9918</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>ParkTurk
Ankara</Description><InternalZoneCode>9939920</InternalZoneCode><LocationCode>993</LocationCode><SignageZoneCode>9920</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>ParkTurk
Ankara</Description><InternalZoneCode>9939921</InternalZoneCode><LocationCode>993</LocationCode><SignageZoneCode>9921</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>ParkTurk
Eskisehir</Description><InternalZoneCode>9939922</InternalZoneCode><LocationCode>993</LocationCode><SignageZoneCode>9922</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>ParkTurk
Eskisehir</Description><InternalZoneCode>9939923</InternalZoneCode><LocationCode>993</LocationCode><SignageZoneCode>9923</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>ParkTurk
Kayseri
Havaalani</Description><InternalZoneCode>9939924</InternalZoneCode><LocationCode>993</LocationCode><SignageZoneCode>9924</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>IPS
IPI</Description><InternalZoneCode>9939925</InternalZoneCode><LocationCode>993</LocationCode>
```



```

e><SignageZoneCode>9925</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>IPS
IPI</Description><InternalZoneCode>9939926</InternalZoneCode><LocationCode>993</LocationCode>
e><SignageZoneCode>9926</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Atlanta,
GA</Description><InternalZoneCode>9939927</InternalZoneCode><LocationCode>993</LocationCode>
><SignageZoneCode>9927</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Liberty
Plugins</Description><InternalZoneCode>9939930</InternalZoneCode><LocationCode>993</LocationCode>
<SignageZoneCode>9930</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Liberty
Plugins</Description><InternalZoneCode>9939931</InternalZoneCode><LocationCode>993</LocationCode>
<SignageZoneCode>9931</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>9940 At
Cobb</Description><InternalZoneCode>9939940</InternalZoneCode><LocationCode>993</LocationCode>
<SignageZoneCode>9940</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Amano At
Cobb</Description><InternalZoneCode>9939942</InternalZoneCode><LocationCode>993</LocationCode>
<SignageZoneCode>9942</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Eval at
Cobb</Description><InternalZoneCode>9939943</InternalZoneCode><LocationCode>993</LocationCode>
<SignageZoneCode>9943</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Atlanta,
GA</Description><InternalZoneCode>9939991</InternalZoneCode><LocationCode>993</LocationCode>
><SignageZoneCode>9991</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Galleria 75
Garage</Description><InternalZoneCode>99399950</InternalZoneCode><LocationCode>993</LocationCode>
<SignageZoneCode>99950</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>99998 at
cobb</Description><InternalZoneCode>99399998</InternalZoneCode><LocationCode>993</LocationCode>
<SignageZoneCode>99998</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Cobb
1</Description><InternalZoneCode>993999990</InternalZoneCode><LocationCode>993</LocationCode>
e><SignageZoneCode>999990</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Cobb
2</Description><InternalZoneCode>993999991</InternalZoneCode><LocationCode>993</LocationCode>
e><SignageZoneCode>999991</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Cobb
3</Description><InternalZoneCode>993999992</InternalZoneCode><LocationCode>993</LocationCode>
e><SignageZoneCode>999992</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Cobb
4</Description><InternalZoneCode>993999993</InternalZoneCode><LocationCode>993</LocationCode>
e><SignageZoneCode>999993</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Cobb
4</Description><InternalZoneCode>993999994</InternalZoneCode><LocationCode>993</LocationCode>
e><SignageZoneCode>999994</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Atlanta,
GA</Description><InternalZoneCode>993999996</InternalZoneCode><LocationCode>993</LocationCode>
<SignageZoneCode>999996</SignageZoneCode><SupplierId>993099</SupplierId></Zone><Zone><Description>Cobb Galleria
Pkwy</Description><InternalZoneCode>993999997</InternalZoneCode><LocationCode>993</LocationCode>
<SignageZoneCode>999997</SignageZoneCode><SupplierId>993099</SupplierId></Zone></Zones>
</ZoneResponse>

```

External Parkingright

The following resources are available

1. ExternalParkingright

Resource URIs

Uri	Methods	Remarks
/externalparkingright	POST, PUT	POST inserts new external parking rights PUT updates existing parking rights

Resource properties

An external parking right is represented by the following properties:

Property	Description	DataType	Remarks
ReferenceId	Unique ID set by the caller to identify this transaction	int	This should be unique for each request even if the request is to update an external parking right that was previously posted.
SignageZoneCode	On street signage zone code	string	
StartTimeLocal	Start time of transaction ,Datetime, local to location of zone	Datetime ISO 8601 format	
EndTimeLocal	End time of transaction, Datetime, local to location of zone	Datetime ISO 8601 format	
SpaceNumber	Space number	Optional, String	
Lpn	Vehicle license plate number	Optional, String	
LpnState	Two letter vehicle license plate state code	Optional, String	

All responses will be:

Property	Description	DataType	Remarks
ResultTimeStampLocal	Result date time stamp	Datetime	
ExternalParkingRight	External parking right submitted	External parking right resource	
ErrorMessage	Error message	String	

Property	Description	DataType	Remarks
ExternalParkingRightId	The Parkmobile unique identifier of the parking right added	int	If the parking right was successfully added, the ExternalParkingRightId will be a value greater than zero

Notes:

- On the PUT method, an external parking right in the specified zone with the exact start time, space number, Lpn and LpnState must exist in the specified zone. Also the End Time is required on the PUT method.
- There must not be an existing external parking right with the same Start time, Space number, Lpn and LPN State in the specified zone.
- If the location is configured as each zone is a space (or meter) the space number and LPN and LPN State can be left empty.
- The LpnState is required if an Lpn is submitted in the request.

HTTP POST

Example Pay-By-Space JSON

/nforceapi/externalparkingright

Header:

Authorization: Basic bWNrYXlfY29iYmdhbGxlcmlhOmxldG1laW4x
 Accept: application/json
 Accept-Encoding: gzip,deflate,sdch
 Content-Type: application/json
 Content-Length: 189

Body:

```
{"ReferenceId":"161EBD54-9829-4D9D-B4B8-A8C84F101A20","SignageZoneCode":"9911","StartTimeLocal":"2013-02-08T09:28:41","EndTimeLocal":"2013-02-08T10:28:40","SpaceNumber":"407"}
```

HTTP/1.1 200 OK

Content-Type: application/json; charset=utf-8
 Date: Thu, 07 Feb 2013 20:55:15 GMT
 Content-Length: 289

```
{"resultTimeStampLocal":"","2013-02-08T11:16:26.8161901","externalParkingRight":{"referenceId":"161EBD54-9829-4D9D-B4B8-A8C84F101A20","signageZoneCode":"9911","startTimeLocal":"2013-02-08T09:28:41","endTimeLocal":"2013-02-
```

```
08T10:28:40","spaceNumber":"407"},"externalParkingRightId":1018}
```

Example Pay-By-Space XML

```
/nforceapi/externalparkingright?format=xml
```

Header:

Authorization: Basic bWNrYXlfY29iYmdhbGxlcmlhOmxdG1laW4x

Accept: application/xml

Accept-Encoding: gzip,deflate,sdch

Content-Type: application/xml

Content-Length: 374

Body

```
<ExternalParkingRight xmlns:i="http://www.w3.org/2001/XMLSchema-instance"
xmlns="urn:parkmobile/nforce/v2/model"><EndTimeLocal>2013-02-
08T10:53:22</EndTimeLocal><SpaceNumber>407</SpaceNumber><SignageZoneCode>9911</SignageZoneCode><StartTimeLocal>2013-02-08T10:23:21</StartTimeLocal><Referenceld>9DB2D1FC-B21B-4DF3-BF23-91A952AFDB52</Referenceld></ExternalParkingRight>
```

HTTP/1.1 200 OK

Content-Type: application/xml

Content-Length: 675

```
<ExternalParkingRightResponse xmlns:i="http://www.w3.org/2001/XMLSchema-instance"
xmlns="urn:parkmobile/nforce/v2/model"><ErrorMessage>String was not recognized as a valid
DateTime.</ErrorMessage><ExternalParkingRight><EndTimeLocal>2013-02-
08T10:53:22</EndTimeLocal><LPN i:nil="true" /><LPNState i:nil="true" /><SignageZoneCode i:nil="true"
/><SpaceNumber>407</SpaceNumber><StartTimeLocal>2013-02-
08T10:23:21</StartTimeLocal><Referenceld>9DB2D1FC-B21B-4DF3-BF23-
91A952AFDB52</Referenceld></ExternalParkingRight><ExternalParkingRightId>0</ExternalParkingRightId><ResultTimeStampLocal>"2013-02-
08T10:55:03.9953233"</ResultTimeStampLocal></ExternalParkingRightResponse>
```

Example Pay-By-Plate JSON

```
/nforceapi/externalparkingright
```

Header:

Authorization: Basic bWNrYXlfY29iYmdhbGxlcmlhOmxdG1laW4x

Accept: application/json

Accept-Encoding: gzip,deflate,sdch

Content-Type: application/json

Content-Length: 189

Body:

```
{"Referenceld":"161EBD54-9829-4D9D-B4B8-A8C84F101A20","SignageZoneCode":"9911","StartTimeLocal":"2013-02-
08T09:28:41","EndTimeLocal":"2013-02-08T10:28:40","LPN":"TRJ0945","LPNState":"NJ"}
```

```

HTTP/1.1 200 OK
Content-Type: application/json; charset=utf-8
Date: Thu, 07 Feb 2013 20:55:15 GMT
Content-Length: 301

{"resultTimeStampLocal":"2013-02-08T10:17:06.2292284","externalParkingRight":{"referenceId":"161EBD54-9829-4D9D-B4B8-A8C84F101A20","signageZoneCode":"9911","startTimeLocal":"2013-02-08T09:28:41","endTimeLocal":"2013-02-08T10:28:40","IPN":"TRJ0945","IPNState":"NJ"},"externalParkingRightId":1016}

```

Example Pay-By-Plate XML

```
/nforceapi/externalparkingright?format=xml
```

Header:

```

Authorization: Basic bWNrYXlfY29iYmdhbGxlcmlhOmxdG1laW4x
Accept: application/xml
Accept-Encoding: gzip,deflate,sdch
Content-Type: application/xml
Content-Length: 411

```

Body

```

<ExternalParkingRight xmlns:i="http://www.w3.org/2001/XMLSchema-instance"
xmlns="urn:parkmobile/nforce/v2/model"><EndTimeLocal>2013-02-
07T15:16:45.8770000</EndTimeLocal><LPN>TRJ0945</LPN><LPNState>NJ</LPNState><SignageZoneCo
de>9911</SignageZoneCode><SpaceNumber i:nil="true" /><StartTimeLocal>2013-02-
07T14:16:45.5670000</StartTimeLocal><ReferenceId>161EBD54-9829-4D9D-B4B8-
A8C84F101A20</ReferenceId></ExternalParkingRight>

```

```

HTTP/1.1 200 OK
Content-Type: application/xml
Content-Length: 631

```

```

<ExternalParkingRightResponse xmlns:i="http://www.w3.org/2001/XMLSchema-instance"
xmlns="urn:parkmobile/nforce/v2/model"><ErrorMessage i:nil="true"
/><ExternalParkingRight><EndTimeLocal>2013-02-
07T15:16:45.8770000</EndTimeLocal><LPN>TRJ0945</LPN><LPNState>NJ</LPNState><SignageZoneCo
de>9911</SignageZoneCode><SpaceNumber i:nil="true" /><StartTimeLocal>2013-02-
07T14:16:45.5670000</StartTimeLocal><ReferenceId>161EBD54-9829-4D9D-B4B8-
A8C84F101A20</ReferenceId></ExternalParkingRight><ExternalParkingRightId>1015</ExternalParkingR
ightId><ResultTimeStampLocal>"2013-02-
08T09:21:13.3910442"</ResultTimeStampLocal></ExternalParkingRightResponse>

```

Error Responses:

Error Responses

Errors information is returned by the server by returning an HTTP status code to indicate the problem. The response body will include the actual error message for details on the error.

HTTP Status Codes

Code	Description	Notes
401	Unauthorized	Authorization value is missing for the header or the credentials provided are incorrect.
403	Account does not have requested rights	The account specified does not have the required role(s) to access the resource.
404	Not Found	The location indicated by the SignageCode is not a valid Parkmobile zone or the zone does not belong to the user's supplier configuration. Or there are no active parkingrights for the requested zone or the zone range.
500	Internal Server Error	An error occurred on the server. The response body includes details of the specific error and the ExternalParkingRightId is 0.

Example Unauthorized

/nforceapi/externalparkingright

Header:

Authorization: Basic bWNrYXlfY29iYmdhbGxlcjpsZXRtZWluMQ==
 Accept: application/json
 Accept-Encoding: gzip,deflate,sdch
 Content-Type: application/json
 Content-Length: 178

Body

```
{
  "ReferenceId": "161EBD54-9829-4D9D-B4B8-A8C84F101A20",
  "SignageZoneCode": "9911",
  "StartTimeLocal": "2013-02-08T09:28:41",
  "EndTimeLocal": "2013-02-08T10:28:40",
  "SpaceNumber": "407"
}
```

HTTP/1.1 401 Unauthorized
 Content-Type: application/json
 Content-Length: 0

Example Account does not have requested rights

/nforceapi/externalparkingright

Header:

Authorization: Basic YmhvZGdlc19zdXBwbGllcjpsZXRtZWluMQ==

Accept: application/json

Accept-Encoding: gzip,deflate,sdch

Content-Type: application/json

Content-Length: 178

Body

```
{"ReferenceId":"161EBD54-9829-4D9D-B4B8-A8C84F101A20","SignageZoneCode":"9911","StartTimeLocal":"2013-02-08T09:28:41","EndTimeLocal":"2013-02-08T10:28:40","SpaceNumber":"407"}
```

HTTP/1.1 403 Account does not have requested rights

Content-Type: application/json

Content-Length: 0

Example Zone Not Found

/nforceapi/externalparkingright

Header:

Authorization: Basic bWNrYXlfY29iYmdhbGxlcmlhOmxldG1laW4x

Accept: application/json

Accept-Encoding: gzip,deflate,sdch

Content-Type: application/json

Content-Length: 176

Body

```
{"ReferenceId":"161EBD54-9829-4D9D-B4B8-A8C84F101A20","SignageZoneCode":"99","StartTimeLocal":"2013-02-08T09:28:41","EndTimeLocal":"2013-02-08T10:28:40","SpaceNumber":"407"}
```

HTTP/1.1 404 NotFound

Content-Type: application/json

Content-Length: 346

```
{"resultTimeStampLocal":"","2013-02-08T12:01:01.7708362\\","externalParkingRight":{"referenceId":"161EBD54-9829-4D9D-B4B8-A8C84F101A20","signageZoneCode":"99","startTimeLocal":"2013-02-08T09:28:41","endTimeLocal":"2013-02-08T10:28:40","spaceNumber":"407"},"externalParkingRightId":0,"errorMessage":"SignageZoneCode does not exists for supplier"}
```

Example Bad Date

/nforceapi/externalparkingright

Header:

Authorization: Basic bWNrYXlfY29iYmdhbGxlcmlhOmxdG1laW4x

Accept: application/json

Accept-Encoding: gzip,deflate,sdch

Content-Type: application/json

Content-Length: 179

Body

```
{"ReferenceId":"161EBD54-9829-4D9D-B4B8-A8C84F101A20","SignageZoneCode":"9911","StartTimeLocal":"2013-002-08T09:28:41","EndTimeLocal":"2013-02-08T10:28:40","SpaceNumber":"407"}
```

HTTP/1.1 500 OK

Content-Type: application/json

Content-Length: 351

```
{"resultTimeStampLocal":"\\2013-02-08T11:53:33.2547161\\","externalParkingRight":{"referenceId":"161EBD54-9829-4D9D-B4B8-A8C84F101A20","signageZoneCode":"9911","startTimeLocal":"2013-002-08T09:28:41","endTimeLocal":"2013-02-08T10:28:40","spaceNumber":"407"},"externalParkingRightId":0,"errorMessage":"String was not recognized as a valid DateTime."}
```


Example queries

This section lists some examples queries.

Parking rights by LPN

Parking rights currently active for license plate 24grsr

<https://staging01.parkmobile.us/nforceapi/parkingrights/vehicle/24grsr>

Parking rights by Id

Parking right by ID 3207576

<https://staging01.parkmobile.us/nforceapi/parkingright/3207576>

Parking rights by zone range

All parking rights in zones 1 to 99999

<https://staging01.parkmobile.us/nforceapi/parkingrights/zones/1/99999>

On scan date

All parking rights in zone 1 to 99999 and at 09/24/2012 07:12:00 PM

<https://staging01.parkmobile.us/nforceapi/parkingrights/zones/1/99999?ScanDateLocal=2012-09-24T19:12:00>

Changes since last update

All parking rights in zone 1 to 99999 and updated or started after 09/24/2012 09:12:00 AM

<https://staging01.parkmobile.us/nforceapi/parkingrights/zones/1/99999?LastUpdateLocal=2012-09-24T09:12:00>

Parking rights by zone code

All parking rights in zone 22230

<https://staging01.parkmobile.us/nforceapi/parkingrights/zone/22230>

Results as Json

<https://staging01.parkmobile.us/nforceapi/parkingrights/zone/22230?format=json>

Results as Xml

<https://staging01.parkmobile.us/nforceapi/parkingrights/zone/22230?format=xml>

Results as Csv

<https://staging01.parkmobile.us/nforceapi/parkingrights/zone/22230?format=csv>

Parking rights by zone code and space number

All parking rights in zone 22230 and on space 100

<https://staging01.parkmobile.us/nforceapi/parkingrights/zone/22230/100>

Parking rights by zone code and space range

All parking rights in zone 22230 between space 50 and 100

<https://staging01.parkmobile.us/nforceapi/parkingrights/zone/22230/50/100>