

CDYNE PAV Web Service

Version 3.0

WSDL: <http://pav3.cdyne.com/PavService.svc?wsdl>

Developer Resources: http://wiki.cdyne.com/index.php/Postal_Address_Verification

Product Web Page: <http://www.cdyne.com/products/postal-address-verification.aspx>

Description: CDYNE PAV (Postal Address Verification) is a [CASS Certified](#)[™] API that allows you to [standardize](#), [correct](#), and [validate](#) US and Canadian addresses in one step. Save time, money, and resources by verifying that addresses are deliverable before mailings or packages are sent out. PAV helps businesses ensure data quality for US and Canadian customers.

CDYNE PAV complements [PAV-I](#), a global postal address verification API which validates and standardizes addresses for over 240 countries.

CDYNE's fully redundant server farms deliver results in a fraction of a second; especially important for a business that collects customer postal address data through sales or enrollment portals. The service can be programmed to clean customer lists by scheduling periodic scrubbing or maintaining integrity at point of entry; doing so provides unparalleled accuracy in gathering and maintaining address data.

The US Dataset is [CASS Certified](#)[™] by the USPS and includes DPV® (Delivery Point Validation), LACSLink®, RDI[™] (Residential Delivery Indicator), SuiteLink[™], eLOT® and barcoding processing free of charge. PAV checks U.S. addresses against a continuously updated USPS® database to [standardize](#), [correct](#), and [validate](#) addresses in one step.

Utilize this Web Service to return a certified deliverable address. It will correct and append missing zip codes including Zip + 4; supplies, corrects and appends county data; and checks for Puerto Rican Urbanization to distinguish similar addresses in the same zip code. The US dataset will also return optional data including [RDI](#), [Proper Case](#) formatting, [Census data](#), [Geolocation data](#), [Legislative data](#), [Carrier Route](#) information, and [eLOT](#) presort information.

The Canadian Dataset will search the Canadian Post's address database to provide up-to-date and accurate address information; prepare addresses for optimum delivery suggested by the Canada Post by receiving an output properly parsed in upper case fonts; and the zip code format separated after the first three characters. Canadian Postal Box Addresses and Rural Route Addresses can also be verified using PAV.

Required License Information: The LicenseKey parameter that is seen in most operations of this Web Service is required to authenticate users invoking this Web Service. You must obtain a valid License Key. You can sign up for PAV [here](#) or by contacting CDYNE for a limited [Trial License Key](#).

EXAMPLE:



Licensing parameter seen in numerous operations	Sample Input
LicenseKey	F01d89fd-5155-5455-5585-e84ab8de8591







Available Operations:


-  **VerifyAddress**
-  **VerifyAddressAdvanced**
-  **GetCityNamesForZipCode**
-  **GetUrbanizationListForZipCode**
-  **GetZipCodesForCityAndState**
-  **GetCongressionalDistrictByZip**
-  **GetIntelligentMailBarcode**
-  **GetZipCodesWithinDistance**
-  **GetZipCodesForFips**










▼ **VerifyAddress** 

- Returns only one match. This operation is used for large volumes or where interaction is not preferred (passive address verification). The best possible address will be given.

Operation: VerifyAddress Input			
Parameter Name	Data Type	Sample Input	Country Application
FirmOrRecipient: Input address recipient or firm name.	String	CDYNE	
PrimaryAddressLine: Input address number and street	String	2125 Smith Ave	













name.			
SecondaryAddressLine: Input secondary address line information. Canada secondary address information must be input into secondary address line for proper validation.	<i>String</i>	Suite 202	
Urbanization: Input urbanization name. Urbanization denotes an area, sector, or residential development within a geographic area. Commonly used in Puerto Rican urban areas, it is an important part of the addressing format, as it describes the location of a specific street.	<i>String</i>		 Applies to U.S. address urbanization names only (i.e., Puerto Rico & U.S. Virgin Islands).
ZipCode: Input ZIP Code.	<i>String</i>	23320	
CityName: Input City name.	<i>String</i>	Chesapeake	
State: Input State Name or State abbreviation.	<i>String</i>	VA	
LicenseKey: See page 1 for more info.	<i>String</i>	F01d89fd-5155-5455-5585-e84ab8de8591	








Operation: VerifyAddress Output			
Parameter Name	Data Type	Sample Output	Country Application
ReturnCode: Operation result code.	<i>Integer</i>	1 -Invalid input 2 - Invalid License Key 10 – Input Address is not found 100 – Input Address is DPV confirmed for all components 101 – Input Address is found, but not DPV confirmed 102 –Input Address Primary number is DPV confirmed. Secondary number is present but not DPV confirmed 103 – Input address Primary number is DPV	



		confirmed, Secondary number is missing. 200 – Canadian address verified for all components. 202 – Canadian address verified for all components except for the secondary number.	
FirmNameOrRecipient: Returns building or firm recipient name when available.	<i>String</i>	CDYNE Corporation	
PrimaryAddressLine: Returns corrected delivery address.	<i>String</i>	2125 SMITH AVE STE 202	
SecondaryAddressLine: If not validated, returns original input for US addresses. Canada secondary address data input on secondary address line will always append to primary addresses line on output.	<i>String</i>		
CityName: Returns City.	<i>String</i>	CHESAPEAKE	
StateAbbreviation: Returns State abbreviation.	<i>String</i>	VA	
ZipCode: Returns ZIP Code.	<i>String</i>	23320-2518	
County: Returns County name.	<i>String</i>	CHESAPEAKE CITY	
Urbanization: Returns address urbanization when applicable. Urbanization denotes an area, sector, or residential development within a geographic area. Commonly used in Puerto Rican urban areas, it is an important part of the addressing format, as it describes the location of a specific street.	<i>String</i>		 Applies to U.S. address urbanization names only(i.e., Puerto Rico & U.S. Virgin Islands).
Country: Returns address country (USA or Canada for version 3.0).	<i>String</i>	USA	














▼ **VerifyAddressAdvanced** 

















- Most commonly used where user interaction is preferred. This could result in multiple returns for U.S. addresses (**Canadian addresses do not include multiple returns with this method**).








Operation: VerifyAddressAdvanced Input			
PavRequest structure			
Parameter Name	Data Type	Sample Input	Country Application
FirmOrRecipient: Input address recipient or firm name.	<i>String</i>	CDYNE	 
PrimaryAddressLine: Input address number and street name.	<i>String</i>	2125 Smith Ave	 
SecondaryAddressLine: Input secondary address line information. Canada secondary address information must be input into secondary address line for proper validation.	<i>String</i>	Suite 200	 
Urbanization: Input urbanization name. Urbanization denotes an area, sector, or residential development within a geographic area. Commonly used in Puerto Rican urban areas, it is an important part of the addressing format, as it describes the location of a specific street.	<i>String</i>		 Applies to U.S. address urbanization names only (i.e., Puerto Rico & U.S. Virgin Islands).
ZipCode: Input ZIP Code.	<i>String</i>	23320	 
CityName: Input City name.	<i>String</i>	Chesapeake	 
State: Input State abbreviation.	<i>String</i>	VA	 
ReturnResidentialIndicator: Default - false. Set to true if residential information is required.	<i>Boolean</i>	True	 Will return "null" when set to true for Canadian addresses.
ReturnMailingIndustryInfo: Default - false. Set to true if extended mailing industry information (Carrier Route, DPV footnotes, Delivery point, etc.) information is required.	<i>Boolean</i>	True	 Will return "null" when set to true for Canadian addresses.
ReturnCityAbbreviation: Default - false. Set to true to return	<i>Boolean</i>	True	 Will return "null" when set to true








abbreviated city name			for Canadian addresses.
ReturnStreetAbbreviated: Default - false. Set to true to return abbreviated street name.	<i>Boolean</i>	True	 Will return "null" when set to true for Canadian addresses.
ReturnGeoLocation: Default - false. Set to true if geo location information is required.	<i>Boolean</i>	True	
ReturnCensusInfo: Default - false. Set to true if census information is required.	<i>Boolean</i>	True	 Will return "null" when set to true for Canadian addresses.
ReturnLegislativeInfo: Default - false. Set to true if legislative information is required.	<i>Boolean</i>	True	 Will return "null" when set to true for Canadian addresses.
ReturnCaseSensitive: Default - false. Set to true to turn off default "all uppercase" return of street names.	<i>Boolean</i>	True	
LicenseKey: See page 1 for more info.	<i>String</i>	F01d89fd-5155-5455-5585-e84ab8de8591	 




Operation: VerifyAddressAdvanced Output			
PavResponse structure			
Parameter Name	Data Type	Sample Output	Country Application
ReturnCode: Operation result code.	<i>Integer</i>	1 -Invalid input 2 - Invalid License Key 10 – Input Address is not found 100 – Input Address is DPV confirmed for all components 101 – Input Address is found, but not DPV confirmed 102 –Input Address Primary number is DPV confirmed. Secondary	 

		number is present but not DPV confirmed 103 – Input address Primary number is DPV confirmed, Secondary number is missing. 200 – Canadian address verified for all components. 202 – Canadian address verified for all components except for the secondary number.	
FirmNameOrRecipient: Returns building or firm recipient name when available.	<i>String</i>	CDYNE Corporation	 
PrimaryAddressLine: Returns corrected delivery address.	<i>String</i>	2125 SMITH AVE STE 202	 
SecondaryAddressLine: If not validated, returns original input for US addresses. Canada secondary address data input on secondary address line will always append to primary addresses line on output.	<i>String</i>		
CityName: Returns City.	<i>String</i>	CHESAPEAKE	 
StateAbbreviation: Returns State abbreviation.	<i>String</i>	VA	 
ZipCode: Returns ZIP Code.	<i>String</i>	23320-2518	 
County: Returns County name.	<i>String</i>	CHESAPEAKE CITY	
CountyNum: Returns County number.	<i>String</i>	0	
Urbanization: Returns address urbanization when applicable. Urbanization denotes an area, sector, or residential development within a geographic area. Commonly used in Puerto Rican urban areas, it is an important part of the addressing format, as it describes the location of a specific street.	<i>String</i>		 Applies to U.S. address urbanization names only (i.e., Puerto Rico & U.S. Virgin Islands).

Country: Returns address country (USA or Canada for version 3.0).	<i>String</i>	USA	
Primary: Returns primary street house number.	<i>String</i>	2125	
PrimaryEO: Returns code identifying if Post Office considers address even, odd or both. Odd (O), even (E), or both (B).	<i>String</i>	B	
PrimaryLow: Returns low-end address of range of addresses.	<i>String</i>	2125	
PrimaryHigh: Returns high-end address of range of addresses.	<i>String</i>	2125	
Secondary: Returns number indicating suite, apartment, or trailer number (if applicable).	<i>String</i>	202	
SecEO: Returns code for secondary address being odd (O), even (E), or both (B).	<i>String</i>		
SecondaryLow: Returns secondary low-end address of range of addresses.	<i>String</i>		
SecondaryHigh: Returns secondary high-end address of range of addresses.	<i>String</i>		
PreferredCityName: Returns preferred City name.	<i>String</i>	CHESAPEAKE	
FinanceNumber: Returns USPS Finance Number.	<i>String</i>		
PreDirectional: Returns direction designation. Ex: N, S, E, W (if available).	<i>String</i>		
PostDirectional: Returns direction designation (after suffix). Ex: N, S, E, W (if available).	<i>String</i>		
Suffix: Returns address component. Ex: AVE, LN, DRIVE.	<i>String</i>	AVE	
StreetName: Returns street name.	<i>String</i>	SMITH	
SecondaryAbbreviation: Returns abbreviation for apartment, suite, or trailer	<i>String</i>	STE	

number (if applicable) abbreviation list.			
PMBDesignator: Returns designator for private mail box.	<i>String</i>	PMB	
PMBNumber: Returns number for private mail box.	<i>String</i>	7	
PostnetBarcode: Returns Address Bar Code.	<i>String</i>	f233202518527f	
IntelligentMailBarcodeKey: Returns a key that can be used to obtain Intelligent Mail Barcode using GetIntelligentMailBarcode method.	<i>String</i>	ZTVQibvZk2Jrcsi387W33A ==	
ResidentialDeliveryIndicator: Returns Residential indicator. Y – address is residential N – address is commercial. This indicator is returned only if ReturnResidentialIndicator was set to true.	<i>String</i>	Y	 Will return “null” when set to true for Canadian addresses.
MultipleMatches: Returns up to 10 available records in case of multiple or default match.	<i>List of AddressInfo</i>		
MailingIndustryInfo: Returns advanced mailing industry information if ReturnMailingIndustryInfo parameter was set to true.	<i>MailingIndustryInfo</i>		
Filed below are part of the MailingIndustryInfo structure			
DpvConfirmationIndicator: Returns DPV indicator.	<i>String</i>	<empty string> – address not presented to DPV (means address was not found in USPS database). N – address is not DPV confirmed. Y – address is DPV confirmed. D – primary number is DPV confirmed, but secondary is not present. S – primary number is DPV confirmed, secondary number is present but not	

		DPV confirmed.	
DPVFootnote1: Address matching footnotes.	<i>String</i>	AA - address is matched to zip4. A1 - address is not matched to zip4.	
DPVFootnote2: Address matching footnotes.	<i>String</i>	BB - address is matched to DPV (all components). CC - primary number is matched to DPV, secondary is present but matched. N1 - primary number is matched to DPV, secondary is missing. M1 - primary number is missing. M3 - primary number is invalid. U1 - address is matched to unique zip code. F1 - address is matched to military address. G1 - address is matched to general delivery address. P1 - input address PO, RR, or HC Box number is missing. P3 - input address PO, RR, or HC Box number is invalid.	
DPVFootnote3: Address matching footnotes.	<i>String</i>	RR - address matched to CMRA with secondary present. R1 - address matched to CMRA with secondary not present.	
DpvNoStatIndicator: Returns NoStat.	<i>String</i>	Y or N	
DpvVacantIndicator: Returns Vacant.	<i>String</i>	Y or N	
DpvCrmaIndicator: Returns CRMA.	<i>String</i>	Y or N	
RecordTypeCode: F=Firm, G=General Delivery, H=High-Rise, P=P.O. Box, R=Rural Route/Highway Contract, S=Street.	<i>String</i>	H	

CarrierRoute: Returns Carrier Route ID.	<i>String</i>	C006	
DefaultFlag: Returns default flag.	<i>String</i>	Y or N	
EwsFlag: Returns early warning system indicator.	<i>String</i>	Y – address is in early warning system database. N – address is not in EWS <empty string> - not presented to EWS.	
DeliveryPoint: Returns Delivery Point.	<i>String</i>	52	
CheckDigit: Returns digit used in PostNet Barcode.	<i>String</i>	7	
CSKey: Returns City State Key.	<i>String</i>	0	
LACSFlag: Returns LACS flag.	<i>String</i>	Y – address has been converted by LACS.	
LACSIndicator: Returns LACS Indicator.	<i>String</i>	L – input address has been matched to “L” marked record.	
LACSReturnCode: Returns LACS Return code.	<i>String</i>		
SuiteLinkReturnCode: Returns SuiteLink Return Code.	<i>String</i>	0	
ELOTAscDesc: Returns eLot ascending/descending code.	<i>String</i>	A or D	
ELOTSequenceNumber: Returns eLot sequence number.	<i>String</i>	0002	
CensusInfo: Returns US Census information if ReturnCensusInfo was set to true.	<i>CensusInfo</i>	0	
Filed below are part of the CensusInfo structure			
MA: Returns Metropolitan Area.	<i>String</i>	572	
MSA: Returns US Census Metropolitan Statistical Area.	<i>String</i>	5720	
CMSA: Returns US Census Consolidated Metropolitan Statistical Area.	<i>String</i>	5720	
PMSA: Returns US Census Primary Metropolitan Statistical Area.	<i>String</i>		
FIPS: Returns Federal Information Processing	<i>String</i>	51550	

Standard Code.			
CensusTractNum: Returns Census Tract Number.	<i>String</i>	0208.01	
CensusBlockNum: Returns Census Block Number.	<i>String</i>	4001	
LegislativeInfo: Returns US Legislative information if ReturnLegislativeInfo was set to true.	<i>LegislativeInfo</i>		
Fields below are part of the LegislativeInfo structure			
CongressDistrictNumber: Returns Congress District Number.	<i>String</i>	4	
StateLegislativeUpper: Returns Upper Legislative District that address belongs to (Senate).	<i>String</i>	014	
StateLegislativeLower: Returns Lower Legislative District that address belongs to (House).	<i>String</i>	090	
GeoLocationInfo: Returns location based information if ReturnGeoLocationInfo was set to true.	<i>GeoLocationInfo</i>		
Fields below are part of the GeoLocationInfo structure			
FromLongitude: Returns 'from' longitude.	<i>String</i>	-76.228684	
FromLatitude: Returns 'from' latitude.	<i>String</i>	36.794340	
ToLongitude: Returns 'to' longitude.	<i>String</i>	-76.229660	
ToLatitude: Returns 'to' latitude.	<i>String</i>	36.798348	
AvgLongitude: Average longitude position for address.	<i>String</i>		
AvgLatitude: Average latitude position for address.	<i>String</i>		
HasDaylightSavings: Returns true or false if address location has Daylight Savings.	<i>Boolean</i>		
TimeZone: Returns Time Zone for area.	<i>String</i>	EST	
AreaCode: Returns Area Code.	<i>String</i>	757	

▼ **GetCityNamesForZipCode** 

▼ Operation: GetCityNamesForZipCode Input		
Parameter Name	Data Type	Sample Input
ZipCode: Input ZIP Code.	<i>String</i>	23320
LicenseKey: See page 1 for more info.	<i>String</i>	F01d89fd-5155-5455-5585-e84ab8de8591

-Returns all possible City names for a ZIP Code as an array.

Operation: GetCityNamesForZipCode Output		
Parameter Name	Data Type	Sample Output
ReturnCode Return code.	<i>Integer</i>	0 – success 1 – invalid input 2 – invalid license 3 – no match
CityName Contains information on all available city names for the given zip code along with mailing and default indicator.	<i>List of City structure</i>	(If Available)

▼ **GetUrbanizationListForZipCode** 

▼ Operation: GetUrbanizationListForZipCode Input		
Parameter Name	Data Type	Sample Input
ZipCode: Input ZIP Code.	<i>String</i>	23320
LicenseKey: See page 1 for more info.	<i>String</i>	F01d89fd-5155-5455-5585-e84ab8de8591

-Returns all possible Urbanization names for a ZIP Code as an array.

Operation: GetUrbanizationListForZipCode Output		
Parameter Name	Data Type	Sample Output
ReturnCode Return code.	<i>Integer</i>	0 – success 1 – invalid input 2 – invalid license 3 – no match
UrbanizationNames Contains information on all available urbanization names for the given zip code (for addresses in Puerto Rico).	<i>List of String</i>	(If Available)

GetZipCodesForCityAndState 

-Returns all possible ZIP Codes for a City/State combination.

Operation: GetZipCodesForCityAndState Input		
Parameter Name	Data Type	Sample Input
City: Input City name.	<i>String</i>	Chesapeake
State: Input State abbreviation.	<i>String</i>	VA
LicenseKey: See page 1 for more info.	<i>String</i>	F01d89fd-5155-5455-5585-e84ab8de8591

Operation: GetZipCodesForCityAndState Output		
Parameter Name	Data Type	Sample Output
ReturnCode Return code.	<i>Integer</i>	0 – success 1 – invalid input 2 – invalid license 3 – no match
ZipCodes Contains information on all available zip codes for the given state and city name.	<i>List of String</i>	(If Available)

▼ **GetCongressionalDistrictByZip** 

-Returns a Congressional District by Zip Code.

Operation: GetCongressionalDistrictByZip Input		
Parameter Name	Data Type	Sample Input
ZipCode: Input ZIP Code.	<i>String</i>	23320
LicenseKey: See page 1 for more info.	<i>String</i>	F01d89fd-5155-5455-5585-e84ab8de8591

Operation: GetCongressionalDistrictByZip Output		
Parameter Name	Data Type	Sample Output
ReturnCode Return code.	<i>Integer</i>	0 – success 1 – invalid input 2 – invalid license 3 – no match 4 – multiple match
CongressionalDistrict: Returns Congressional District.	<i>String</i>	04

▼ **GetIntelligentMailBarcode** 

-Returns Intelligent Mail Barcode string using the key obtained from VerifyAddressAdvanced call.

Operation: GetIntelligentMailBarcode Input		
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Parameter Name	Data Type	Sample Input
BarcodeIdentifier: Input barcode identifier.	<i>String</i>	12
ServiceTypeIdentifier: Input service type identifier.	<i>String</i>	123
MailerIdentifier: Input mailer identifier.	<i>String</i>	123456
SerialNumber: Input serial number.	<i>String</i>	123456789
IntelligentMailBarcodeKey: barcode key from VerifyAddressAdvanced.	<i>String</i>	ZTVQibvZk2Jrcsi387W33A==
LicenseKey: See page 1 for more info.	<i>String</i>	F01d89fd-5155-5455-5585-e84ab8de8591

Operation: GetIntelligentMailBarcode Output		
Parameter Name	Data Type	Sample Output
ReturnCode Return code.	<i>Integer</i>	0 – success 1 – invalid input
Barcode: Returns Intelligent Mail Barcode string.	<i>String</i>	TFDFATAADTAFATTDATTDFAFAAFFFFFFFAAFFTAATAT ADADFDDDTATFAATAFDFTDAA

▼ **GetZipCodesWithinDistance** 

-Returns all zip codes within a Radius around a Lat/Long Geolocation.

Operation: GetZipCodesWithinDistance Input		
Parameter Name	Data Type	Sample Input
Latitude: Latitude coordinate from: -179.2311 to 179.8597	<i>String</i>	36.796768
Longitude: Longitude coordinate from: 17.8315 to 71.4411	<i>String</i>	-76.228590
Radius: In Miles (50 max).	<i>String</i>	1
LicenseKey: See page 1 for more info.	<i>String</i>	F01d89fd-5155-5455-5585-e84ab8de8591

Operation: GetZipCodesWithinDistance Output		
Parameter Name	Data Type	Sample Output
ReturnCode Return code.	<i>Integer</i>	0- Success

		1- Invalid Input 2- Invalid License Key 3- Returned 0 Zip Codes 4- Outside Of Latitude/Longitude Range
ZipCodes: Returns Array of Zip codes within Range.	<i>String</i>	23325 23320 23464

▼ **GetZipCodesForFips** 
 -Returns all zip codes within a FIPS.

Operation: GetZipCodesForFips Input		
Parameter Name	Data Type	Sample Input
FIPS: The Federal information processing standards code that represents the area or county of interest. http://www.census.gov/datamap/fipslist/AllSt.txt	<i>String</i>	51710
LicenseKey: See page 1 for more info.	<i>String</i>	F01d89fd-5155-5455-5585-e84ab8de8591

Operation: GetZipCodesForFips Output		
Parameter Name	Data Type	Sample Output
ReturnCode: Return code.	<i>Integer</i>	0- Success 1- Invalid Input 2- Invalid License Key 3- Returned 0 Zip Codes
ZipCodes: Returns Array of Zip codes related to FIPS	<i>String</i>	23501 23502 23503