

ContinuousStops specification experimentally with only a few existing cases. Google currently ignores the

This document defines the format and structure of the files that comprise a GTFS dataset.

GTFS-ContinuousStops specifications that are in your feed.

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Term definitions

This section defines terms that are used throughout this document.

- Dataset A complete set of files defined by this specification reference. Altering the dataset creates a new version of the dataset. Datasets should be published at a public, permanent URL, including the zip file name. (e.g., https://www.agency.org/gtfs/gtfs.zip).
- **Record** A basic data structure comprised of a number of different field values describing a single entity (e.g. transit agency, stop, route, etc.). Represented, in a table, as a row.
- Field A property of an object or entity. Represented, in a table, as a column.
- Field Value An individual entry in a field. Represented, in a table, as a single cell.
- Required The field must be included in the dataset, and a value must be provided in that field
 for each record. Some required fields permit an empty string as a value (denoted in this
 specification as empty). To enter an empty string, just omit any text between the commas for that
 field.
- Optional The field may be omitted from the dataset. If an optional column is included, some of the entries in that field may be empty strings. To enter an empty string, just omit any text between the commas for that field. Note that an omitted field is equivalent to a field that is entirely empty.
- Conditionally required The field or file is required under certain conditions, which are outlined
 in the field or file description. Outside of these conditions, this field or file is optional.
- Service day A service day is a time period used to indicate route scheduling. The exact definition of service day varies from agency to agency but service days often do not correspond with calendar days. A service day may exceed 24:00:00 if service begins on one day and ends on a following day. For example, service that runs from 08:00:00 on Friday to 02:00:00 on Saturday, could be denoted as running from 08:00:00 to 26:00:00 on a single service day.

Field types

- Color A color encoded as a six-digit hexadecimal number. Refer to https://htmlcolorcodes.com
 to generate a valid value (the leading "#" is not included).
 - Example: FFFFF for white, 000000 for black or 0039A6 for the A,C,E lines in NYMTA.
- Currency Code An ISO 4217 alphabetical currency code. For the list of current currency, refer to https://en.wikipedia.org/wiki/ISO_4217#Active_codes.
 - Example: CAD for Canadian dollars, EUR for euros or JPY for Japanese yen.
- **Date** Service day in the YYYYMMDD format. Since time within a service day can be above 24:00:00, a service day often contains information for the subsequent day(s).
 - Example: 20180913 for September 13th, 2018.
- Email An email address.

Example: example@example.com

- Enum An option from a set of predefined constants defined in the "Description" column.

 Example: The route_type field contains a 0 for tram, a 1 for subway...
- ID An ID field value is an internal ID, not intended to be shown to riders, and is a sequence of
 any UTF-8 characters. Using only printable ASCII characters is recommended. IDs defined in one
 .txt file are often referenced in another .txt file.

Example: The stop_id field in stops.txt is a ID. The stop_id field in stop_times.txt is an ID referencing stops.stop_id.

 Language Code - An IETF BCP 47 language code. For an introduction to IETF BCP 47, refer to http://www.rfc-editor.org/rfc/bcp/bcp47.txt and http://www.w3.org/International/articles/language-tags/.

Example: en for English, en-US for American English or de for German.

• Latitude - WGS84 latitude in decimal degrees. The value must be greater than or equal to -90.0 and less than or equal to 90.0.

Example: 41.890169 for the Colosseum in Rome.

• Longitude - WGS84 longitude in decimal degrees. The value must be greater than or equal to -180.0 and less than or equal to 180.0.

Example: 12.492269 for the Colosseum in Rome.

- Non-negative Float A floating point number greater than or equal to 0.
- Non-negative Integer A integer greater than or equal to 0.
- Phone number A phone number.
- Time Time in the HH:MM:SS format (H:MM:SS is also accepted). The time is measured from "noon minus 12h" of the service day (effectively midnight except for days on which daylight savings time changes occur. For more information, see the guidelines article). For times occurring after midnight, enter the time as a value greater than 24:00:00 in HH:MM:SS local time for the day on which the trip schedule begins.

Example: 14:30:00 for 2:30PM or 25:35:00 for 1:35AM on the next day.

- **Text** A string of UTF-8 characters, which is aimed to be displayed and which must therefore be human readable.
- Timezone TZ timezone from the https://www.iana.org/time-zones. Timezone names never contain the space character but may contain an underscore. Refer to http://en.wikipedia.org/wiki/List_of_tz_zones for a list of valid values.

 Example: Asia/Tokyo, America/Los_Angeles or Africa/Cairo.
- URL A fully qualified URL that includes http:// or https://, and any special characters in the
 URL must be correctly escaped. See the following
 http://www.w3.org/Addressing/URL/4_URI_Recommentations.html for a description of how to
 create fully qualified URL values.

Dataset files

This specification defines the following files:

Filename	Required	Defines
agency.txt	Required	Transit agencies with service represented in this dataset.
stops.txt	Required	Stops where vehicles pick up or drop off riders. Also defines stations and station entrances.

Filename	Required	Defines
routes.txt	Required	Transit routes. A route is a group of trips that are displayed to riders as a single service.
trips.txt	Required	Trips for each route. A trip is a sequence of two or more stops that occur during a specific time period.
stop_times.txt	Required	Times that a vehicle arrives at and departs from stops for each trip.
calendar.txt	Conditionally required	Service dates specified using a weekly schedule with start and end dates. This file is required unless all dates of service are defined in calendar_dates.txt.
calendar_dates.txt	Conditionally required	Exceptions for the services defined in the calendar.txt. If calendar.txt is omitted, then calendar_dates.txt is required and must contain all dates of service.
fare_attributes.txt	Optional	Fare information for a transit agency's routes.
fare_rules.txt	Optional	Rules to apply fares for itineraries.
shapes.txt	Optional	Rules for mapping vehicle travel paths, sometimes referred to as route alignments.
frequencies.txt	Optional	Headway (time between trips) for headway-based service or a compressed representation of fixed-schedule service.
transfers.txt	Optional	Rules for making connections at transfer points between routes.
pathways.txt	Optional	Pathways linking together locations within stations.
levels.txt	Optional	Levels within stations.
feed_info.txt	Conditionally required	Dataset metadata, including publisher, version, and expiration information.
translations.txt	Optional	Translated information of a transit agency.
attributions.txt	Optional	Specifies the attributions that are applied to the dataset.

File requirements

The following requirements apply to the format and contents of the dataset files:

- All files must be saved as comma-delimited text.
- The first line of each file must contain field names. Each subsection of the Field definitions section corresponds to one of the files in a GTFS dataset and lists the field names that may be used in that file.
- All field names are case-sensitive.
- Field values may not contain tabs, carriage returns or new lines.
- Field values that contain quotation marks or commas must be enclosed within quotation marks. In addition, each quotation mark in the field value must be preceded with a quotation mark. This is consistent with the manner in which Microsoft Excel outputs comma-delimited (CSV) files. For more information on the CSV file format, see http://tools.ietf.org/html/rfc4180. The following example demonstrates how a field value would appear in a comma-delimited file:
 - Original field value: Contains "quotes", commas and text
 - Field value in CSV file: "Contains ""quotes"", commas and text"

- Field values must not contain HTML tags, comments or escape sequences.
- Remove any extra spaces between fields or field names. Many parsers consider the spaces to be part of the value, which may cause errors.
- Each line must end with a CRLF or LF linebreak character.
- Files should be encoded in UTF-8 to support all Unicode characters. Files that include the
 Unicode byte-order mark (BOM) character are acceptable. See
 http://unicode.org/faq/utf_bom.html#BOM for more information on the BOM character and UTF8.
- All dataset files must be zipped together.

Field definitions

agency.txt

File: Required

Field Name	Type	Required	Description
agency_id	ID	Conditionally Required	Identifies a transit brandwhich is often synonymous with a transit agency. Note that in some cases, such as when a single agency operates multiple separate services, agencies and brands are distinct. This document uses the term "agency" in place of "brand". A dataset may contain data from multiple agencies. This field is required when the dataset contains data for multiple transit agencies, otherwise it is optional.
agency_name	Text	Required	Full name of the transit agency.
agency_url	URL	Required	URL of the transit agency.
agency_timezone	Timezone	Required	Timezone where the transit agency is located. If multiple agencies are specified in the dataset, each must have the same agency_timezone.
agency_lang	Language code	Optional	Primary language used by this transit agency. This field helps GTFS consumers choose capitalization rules and other language-specific settings for the dataset.
agency_phone	Phone number	Optional	A voice telephone number for the specified agency. This field is a string value that presents the telephone number as typical for the agency's service area. It can and should contain punctuation marks to group the digits of the number. Dialable text (for example, TriMet's 503-238-RIDE) is permitted, but the field must not contain any other descriptive text.
agency_fare_url	URL	Optional	URL of a web page that allows a rider to purchase tickets or other fare instruments for that agency online.
agency_email	Email	Optional	Email address actively monitored by the agency's customer service department. This email address should be a direct contact point where transit riders can reach a customer service representative at the agency.

stops.txt

Field Name	Туре	Required	Description
stop_id	ID	Required	Identifies a stop, station, or station entrance.
			The term "station entrance" refers to both station entrances and station exits. Stops, stations or station entrances are collectively referred to as locations. Multiple routes may use the same stop.
stop_code	Text	Optional	Short text or a number that identifies the location for riders. These codes are often used in phone-based transit information systems or printed on signage to make it easier for riders to get information for a particular location. The stop_code can be the same as stop_id if it is public facing. This field should be left empty for locations without a code presented to riders.
stop_name	Text	Conditionally Required	Name of the location. Use a name that people will understand in the local and tourist vernacular.
			When the location is a boarding area (location_type=4), the stop_name should contains the name of the boarding area as displayed by the agency. It could be just one letter (like on some European intercity railway stations), or text like "Wheelchair boarding area" (NYC's Subway) or "Head of short trains" (Paris' RER).
			Conditionally Required: • Required for locations which are stops (location_type=0), stations (location_type=1) or entrances/exits (location_type=2). • Optional for locations which are generic nodes (location_type=3) or boarding areas (location_type=4).
stop_desc	Text	Optional	Description of the location that provides useful, quality information. Do not simply duplicate the name of the location.
stop_lat	Latitude	Conditionally Required	Latitude of the location.
		•	Conditionally Required: • Required for locations which are stops (location_type=0), stations (location_type=1) or entrances/exits (location_type=2). • Optional for locations which are generic nodes (location_type=3) or boarding areas (location_type=4).
stop_lon	Longitude	Conditionally Required	Longitude of the location. Conditionally Required: • Required for locations which are stops (location_type=0), stations (location_type=1) or entrances/exits (location_type=2).

Field Name	Туре	Required	Description
			<pre>nodes (location_type=3) or boarding areas (location_type=4).</pre>
zone_id	ID	Conditionally Required	Identifies the fare zone for a stop. This field is required if providing fare information using fare_rules.txt, otherwise it is optional. If this record represents a station or station entrance, the zone_id is ignored.
stop_url	URL	Optional	URL of a web page about the location. This should be different from the agency_agency_url and the routes.route_url field values.
location_type	Enum	Optional	Type of the location: • 0 (or empty): Stop (or Platform). A location where passengers board or disembark from a transit vehicle. Is called a platform when defined within a parent_station. • 1: Station. A physical structure or area that contains one or more platform. • 2: Entrance/Exit. A location where passengers can enter or exit a station from the street. If an entrance/exit belongs to multiple stations, it can be linked by pathways to both, but the data provider must pick one of them as parent. • 3: Generic Node. A location within a station, not matching any other location_type, which can be used to link together pathways define in pathways.txt. • 4: Boarding Area. A specific location on a platform, where passengers can board and/or alight vehicles.
parent_station	ID referencing stops.stop_id	Conditionally Required	Defines hierarchy between the different locations defined in stops.txt. It contains the ID of the parent location, as followed: • Stop/platform (location_type=0): the parent_station field contains the ID of a station. • Station (location_type=1): this field must be empty. • Entrance/exit (location_type=2) or generic node (location_type=3): the parent_station field contains the ID of a station (location_type=1) • Boarding Area (location_type=4): the parent_station field contains ID of a platform. Conditionally Required: • Required for locations which are entrances (location_type=2), generic nodes (location_type=3) or boarding areas (location_type=4). • Optional for stops/platforms (location_type=0). • Forbidden for stations (location_type=1).
stop_timezone	Timezone	Optional	Timezone of the location. If the location has a parent station, it inherits the parent station's timezone instead of applying its own. Stations

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Field Name	Type	Required	Description
			and parentless stops with empty stop_timezone inherit the timezone specified by agency.agency_timezone. If stop_timezone values are provided, the times in stop_times.txt should be entered as the time since midnight in the timezone specified by agency.agency_timezone. This ensures that the time values in a trip always increase over the course of a trip,
			regardless of which timezones the trip crosses.
wheelchair_boarding	Enum	Optional	Indicates whether wheelchair boardings are possible from the location. Valid options are:
			For parentless stops:
			0 or empty - No accessibility information for
			the stop.
			1 - Some vehicles at this stop can be boarded
			by a rider in a wheelchair.
			2 - Wheelchair boarding is not possible at this stop.
			For child stops:
			0 or empty - Stop will inherit its
			wheelchair_boarding behavior from the
			parent station, if specified in the parent.
			1 - There exists some accessible path from
			outside the station to the specific
			stop/platform.
			2 - There exists no accessible path from
			outside the station to the specific stop/platform.
			For station entrances/exits:
			 0 or empty - Station entrance will inherit its wheelchair_boarding behavior from the parent station, if specified for the parent. 1 - Station entrance is wheelchair accessible. 2 - No accessible path from station entrance to stops/platforms.
level_id	ID referencing levels.level_id	Optional	Level of the location. The same level can be used by multiple unlinked stations.
platform_code	Text	Optional	Platform identifier for a platform stop (a stop belonging to a station). This should be just the platform identifier (eg. G or 3). Words like "platform" or "track" (or the feed's language-specific equivalent) should not be included. This allows feed consumers to more easily internationalize and localize the platform identifier into other languages.

routes.txt

Field Name	Туре	Required	Description
route_id	ID	Required	Identifies a route.

Field Name	Туре	Required	Description
agency_id	ID referencing agency_id	Conditionally required	Agency for the specified route. This field is required when the dataset provides data for routes from more than one agency in agency.txt, otherwise it is optional.
route_short_name	Text	Conditionally required	Short name of a route. This will often be a short, abstract identifier like "32", "100X", or "Green" that riders use to identify a route, but which doesn't give any indication of what places the route serves. Either route_short_name or route_long_name must be specified, or potentially both if appropriate.
route_long_name	Text	Conditionally required	Full name of a route. This name is generally more descriptive than the route_short_name and often includes the route's destination or stop. Either route_short_name or route_long_name must be specified, or potentially both if appropriate.
route_desc	Text	Optional	Description of a route that provides useful, quality information. Do not simply duplicate the name of the route.
			Example: "A" trains operate between Inwood-207 St, Manhattan and Far Rockaway-Mott Avenue, Queens at all times. Also from about 6AM until about midnight, additional "A" trains operate between Inwood-207 St and Lefferts Boulevard (trains typically alternate between Lefferts Blvd and Far Rockaway).
route_type	Enum	Required	Indicates the type of transportation used on a route. Valid options are:
			 0 - Tram, Streetcar, Light rail. Any light rail or street level system within a metropolitan area. 1 - Subway, Metro. Any underground rail system within a metropolitan area. 2 - Rail. Used for intercity or long-distance travel. 3 - Bus. Used for short- and long-distance bus routes. 4 - Ferry. Used for short- and long-distance boat service. 5 - Cable tram. Used for street-level rail cars where the cable runs beneath the vehicle, e.g., cable car in San Francisco. 6 - Aerial lift, suspended cable car (e.g., gondola lift, aerial tramway). Cable transport where cabins, cars, gondolas or open chairs are suspended by means of one or more cables. 7 - Funicular. Any rail system designed for steep inclines. 11 - Trolleybus. Electric buses that draw power from overhead wires using poles. 12 - Monorail. Railway in which the track consists of a single rail or a beam.

Field Name	Туре	Required	Description
route_url	URL	Optional	URL of a web page about the particular route. Should be different from the agency_url value.
route_color	Color	Optional	Route color designation that matches public facing material. Defaults to white (FFFFF) when omitted or left empty. The color difference between route_color and route_text_color should provide sufficient contrast when viewed on a black and white screen.
route_text_color	Color	Optional	Legible color to use for text drawn against a background of route_color. Defaults to black (000000) when omitted or left empty. The color difference between route_color and route_text_color should provide sufficient contrast when viewed on a black and white screen.
route_sort_order	Non-negative integer	Optional	Orders the routes in a way which is ideal for presentation to customers. Routes with smaller route_sort_order values should be displayed first.
continuous_pickup	Enum	Optional	Indicates whether a rider can board the transit vehicle anywhere along the vehicle's travel path. The path is described by shapes.txt on every trip of the route. Valid options are: 0 - Continuous stopping pickup. 1 or empty - No continuous stopping pickup. 2 - Must phone an agency to arrange continuous stopping pickup. 3 - Must coordinate with a driver to arrange continuous stopping pickup. The default continuous pickup behavior defined in routes.txt can be overridden in stop_times.txt.
continuous_drop_off	Enum	Optional	Indicates whether a rider can alight from the transit vehicle at any point along the vehicle's travel path. The path is described by shapes.txt on every trip of the route. Valid options are: 0- Continuous stopping drop-off. 1 or empty - No continuous stopping drop-off. 2 - Must phone an agency to arrange continuous stopping drop-off. 3 - Must coordinate with a driver to arrange continuous stopping drop-off. The default continuous drop-off behavior
			defined in routes.txt can be overridden in stop_times.txt.

Field Name	Туре	Required	Description
route_id	ID referencing routes.route_id	Required	Identifies a route.
service_id	rvice_id ID referencing calendar.service_id or calendar_dates.service_id		Identifies a set of dates when ser for one or more routes.
trip_id	ID	Required	Identifies a trip.
trip_headsign	Text	Optional	Text that appears on signage ider destination to riders. Use this fie between different patterns of serroute. If the headsign changes dutrip_headsign can be overrid values for the stop_times.sto
trip_short_name	Text	Optional	Public facing text used to identif for instance, to identify train nur commuter rail trips. If riders do on trip names, leave this field en trip_short_name value, if pro uniquely identify a trip within a should not be used for destinatio limited/express designations.
direction_id	Enum	Optional	Indicates the direction of travel f field is not used in routing; it proseparate trips by direction when tables. Valid options are: 0 - Travel in one direction (e.g. 1 - Travel in the opposite directitravel).
			Example: The trip_headsign direction_id fields could be a assign a name to travel in each a of trips. A trips.txt file could records for use in time tables: trip_id,,trip_headsig 1234,,Airport,0 1505,,Downtown,1
block_id	ID	Optional	Identifies the block to which the block consists of a single trip or trips made using the same vehicl shared service days and block_: can have trips with different serv distinct blocks. See the example
shape_id	ID referencing shapes.shape_id	Conditionally required	Identifies a geospatial shape that vehicle travel path for a trip. Conditionally required: This field is required if the trip I behavior defined, either at the ro stop time level. Otherwise, it's optional.
wheelchair_accessible	Enum	Optional	Indicates wheelchair accessibility are:

Field Name	Туре	Required	Description
			 0 or empty - No accessibility inf trip. 1 - Vehicle being used on this pa accommodate at least one rider in 2 - No riders in wheelchairs can on this trip.
bikes_allowed	Enum	Optional	Indicates whether bikes are allow are:
			0 or empty - No bike informatio 1 - Vehicle being used on this pa accommodate at least one bicycle 2 - No bicycles are allowed on the

Example: Blocks and service day

The example below is valid, with distinct blocks every day of the week.

route_id	trip_id	service_id	block_id	(first stop time)	(last stop time)
red	trip_1	mon-tues-wed-thurs-fri-sat- sun	red_loop	22:00:00	22:55:00
red	trip_2	fri-sat-sun	red_loop	23:00:00	23:55:00
red	trip_3	fri-sat	red_loop	24:00:00	24:55:00
red	trip_4	mon-tues-wed-thurs	red_loop	20:00:00	20:50:00
red	trip_5	mon-tues-wed-thurs	red_loop	21:00:00	21:50:00

Notes on above table:

- On Friday into Saturday morning, for example, a single vehicle operates trip_1, trip_2, and trip_3 (10:00 PM through 12:55 AM). Note that the last trip occurs on Saturday, 12:00 AM to 12:55 AM, but is part of the Friday "service day" because the times are 24:00:00 to 24:55:00.
- On Monday, Tuesday, Wednesday, and Thursday, a single vehicle operates trip_1, trip_4, and trip_5 in a block from 8:00 PM to 10:55 PM.

$stop_times.txt$

Field Name	Туре	Required	Description
trip_id	ID referencing trips.trip_id	Required	Identifies a trip.
arrival_time	Time	Conditionally required	Arrival time at a specific stop for a specific trip on a route. If there are not separate times for arrival and departure at a stop, enter the same value for arrival_time and departure_time. For times occurring after midnight on the service day, enter the time as a value greater than 24:00:00 in HH:MM:SS local

Field Name	Туре	Required	Description
Tield Paine	1,100	required	time for the day on which the trip schedule
			begins.
			Scheduled stops where the vehicle strictly adheres to the specified arrival and departure times are timepoints. If this stop is not a timepoint, it is recommended to provide an estimated or interpolated time. If this is not available, arrival_time can be left empty. Further, indicate that interpolated times are provided with timepoint=0. If interpolated times are indicated with timepoint=0, then time points must be indicated with timepoint=1. Provide arrival times for all stops that are time points. An arrival time must be specified for the first and the last stop in a trip.
departure_time	Time	Conditionally required	Departure time from a specific stop for a specific trip on a route. For times occurring after midnight on the service day, enter the time as a value greater than 24:00:00 in HH:MM:SS local time for the day on which the trip schedule begins. If there are not separate times for arrival and departure at a stop, enter the same value for arrival_time and departure_time. See the arrival_time description for more details about using timepoints correctly.
			The departure_time field should specify time values whenever possible, including non-binding estimated or interpolated times between timepoints.
stop_id	ID referencing stops.stop_id	Required	Identifies the serviced stop. All stops serviced during a trip must have a record in stop_times.txt. Referenced locations must be stops, not stations or station entrances. A stop may be serviced multiple times in the same trip, and multiple trips and routes may service the same stop.
stop_sequence	Non-negative integer	Required	Order of stops for a particular trip. The values must increase along the trip but do not need to be consecutive.
			Example: The first location on the trip could have a stop_sequence=1, the second location on the trip could have a stop_sequence=23, the third location could have a stop_sequence=40, and so on.
stop_headsign	Text	Optional	Text that appears on signage identifying the trip's destination to riders. This field overrides the default trips.trip_headsign when the headsign changes between stops. If the headsign is displayed for an entire trip, use trips.trip_headsign instead.
			A stop_headsign value specified for one stop_time does not apply to subsequent stop_times in the same trip. If you want to override the trip_headsign for multiple stop_times in the same trip, the

Field Name	Туре	Required	Description
			<pre>stop_headsign value must be repeated in each stop_time row.</pre>
pickup_type	Enum	Optional	Indicates pickup method. Valid options are: 0 or empty - Regularly scheduled pickup. 1 - No pickup available. 2 - Must phone agency to arrange pickup. 3 - Must coordinate with driver to arrange pickup.
drop_off_type	Enum	Optional	Indicates drop off method. Valid options are: 0 or empty - Regularly scheduled drop off. 1 - No drop off available. 2 - Must phone agency to arrange drop off. 3 - Must coordinate with driver to arrange drop off.
continuous_pickup	Enum	Optional	Indicates whether a rider can board the transit vehicle at any point along the vehicle's travel path. The path is described by shapes.txt, from this stop_time to the next stop_time in the trip's stop_sequence. Valid options are: 0 - Continuous stopping pickup. 1 or empty - No continuous stopping pickup. 2 - Must phone an agency to arrange continuous pickup. 3 - Must coordinate with a driver to arrange continuous stopping pickup. The continuous pickup behavior indicated in stop_times.txt overrides any behavior defined in routes.txt.
continuous_drop_off	Enum	Optional	Indicates whether a rider can alight from the transit vehicle at any point along the vehicle's travel path as described by shapes.txt, from this stop_time to the next stop_time in the trip's stop_sequence. 0 - Continuous stopping drop off. 1 or empty - No continuous stopping drop off. 2 - Must phone an agency to arrange continuous drop off. 3 - Must coordinate with a driver to arrange continuous stopping drop off. The continuous drop-off behavior indicated in stop_times.txt overrides any behavior defined in routes.txt.
shape_dist_traveled	Non-negative float	Optional	Actual distance traveled along the associated shape, from the first stop to the stop specified in this record. This field specifies how much of the shape to draw between any two stops during a trip. Must be in the same units used in shapes.txt. Values used for shape_dist_traveled must increase along with stop_sequence; they cannot be used to show reverse travel along a route.

Field Name	Туре	Required	Description
			Example: If a bus travels a distance of 5.25 kilometers from the start of the shape to the stop, shape_dist_traveled=5.25.
timepoint	Enum	Optional	Indicates if arrival and departure times for a stop are strictly adhered to by the vehicle or if they are instead approximate and/or interpolated times. This field allows a GTFS producer to provide interpolated stop-times, while indicating that the times are approximate. Valid options are:
			0 - Times are considered approximate.1 or empty - Times are considered exact.

calendar.txt

File: Conditionally required

Field Name	Type	Required	Description
service_id	ID	Required	Uniquely identifies a set of dates when service is available for one or more routes. Each service_id value can appear at most once in a calendar.txt file.
monday	Enum	Required	Indicates whether the service operates on all Mondays in the date range specified by the start_date and end_date fields. Note that exceptions for particular dates may be listed in calendar_dates.txt. Valid options are:
			1 - Service is available for all Mondays in the date range.0 - Service is not available for Mondays in the date range.
tuesday	Enum	Required	Functions in the same way as monday except applies to Tuesdays
wednesday	Enum	Required	Functions in the same way as monday except applies to Wednesdays
thursday	Enum	Required	Functions in the same way as monday except applies to Thursdays
friday	Enum	Required	Functions in the same way as monday except applies to Fridays
saturday	Enum	Required	Functions in the same way as monday except applies to Saturdays.
sunday	Enum	Required	Functions in the same way as monday except applies to Sundays.
start_date	Date	Required	Start service day for the service interval.
end_date	Date	Required	End service day for the service interval. This service day is included in the interval.

$calendar_dates.txt$

File: Conditionally required

The calendar_dates.txt table can explicitly activate or disable service by date. It can be used in two ways.

• Recommended: Use calendar_dates.txt in conjunction with calendar.txt to define exceptions to the default service patterns defined in calendar.txt. If service is generally regular, with a few changes on explicit dates (for instance, to accommodate special event services, or a school schedule), this is a good approach. In this case calendar_dates.service_id is an

ID referencing calendar.service_id.

• Alternate: Omit calendar.txt, and specify each date of service in calendar_dates.txt. This allows for considerable service variation and accommodates service without normal weekly schedules. In this case service_id is an ID.

Field Name	Туре	Required	Description
service_id	ID referencing calendar.service_id or ID	Required	Identifies a set of dates when a service exception occurs for one or more routes. Each (service_id, date) pair can only appear once in calendar_dates.txt if using calendar.txt and calendar_dates.txt in conjunction. If a service_id value appears in both calendar.txt and calendar_dates.txt, the information in calendar_dates.txt modifies the service information specified in calendar.txt.
date	Date	Required	Date when service exception occurs.
exception_type	Enum	Required	Indicates whether service is available on the date specified in the date field. Valid options are:
			1 - Service has been added for the specified date.2 - Service has been removed for the specified date.
			Example: Suppose a route has one set of trips available on holidays and another set of trips available on all other days. One service_id could correspond to the regular service schedule and another service_id could correspond to the holiday schedule. For a particular holiday, the calendar_dates.txt file could be used to add the holiday to the holiday service_id and to remove the holiday from the regular service_id schedule.

fare_attributes.txt

File: Optional

Field Name	Туре	Required	Description
fare_id	ID	Required	Identifies a fare class.
price	Non-negative float	Required	Fare price, in the unit specified by currency_type.
currency_type	Currency code	Required	Currency used to pay the fare.
payment_method	Enum	Required	Indicates when the fare must be paid. Valid options are:
			0 - Fare is paid on board.1 - Fare must be paid before boarding.
transfers	Enum	Required	Indicates the number of transfers permitted on this fare. The fact that this field can be left empty is an exception to the requirement that a Required field must not be empty. Valid options are:

Field Name	Туре	Required	Description
			 0 - No transfers permitted on this fare. 1 - Riders may transfer once. 2 - Riders may transfer twice. empty - Unlimited transfers are permitted.
agency_id	ID referencing agency_id	Conditionally Required	Identifies the relevant agency for a fare. This field is required for datasets with multiple agencies defined in agency.txt, otherwise it is optional.
transfer_duration	Non-negative integer	Optional	Length of time in seconds before a transfer expires. When transfers=0 this field can be used to indicate how long a ticket is valid for or it can can be left empty.

fare_rules.txt

File: Optional

The fare_rules.txt table specifies how fares in fare_attributes.txt apply to an itinerary. Most fare structures use some combination of the following rules:

- Fare depends on origin or destination stations.
- Fare depends on which zones the itinerary passes through.
- Fare depends on which route the itinerary uses.

For examples that demonstrate how to specify a fare structure with <code>fare_rules.txt</code> and <code>fare_attributes.txt</code>, see https://code.google.com/p/googletransitdatafeed/wiki/FareExamples in the GoogleTransitDataFeed open source project wiki.

Field Name	Туре	Required	Description
fare_id	ID referencing fare_attributes.fare_id	Required	Identifies a fare class.
route_id	ID referencing routes.route_id	Optional	Identifies a route associated with the fare class. If with the same fare attributes exist, create a record fare_rules.txt for each route.
			Example: If fare class "b" is valid on route "TSW fare_rules.txt file would contain these reconclass: fare_id,route_id b,TSW b,TSE
origin_id	ID referencing stops.zone_id	Optional	Identifies an origin zone. If a fare class has multiple create a record in fare_rules.txt for each or
			Example: If fare class "b" is valid for all travel or either zone "2" or zone "8", the fare_rules.tx contain these records for the fare class: fare_id,,origin_id b,,2 b,,8
destination_id	ID referencing	Optional	Identifies a destination zone. If a fare class has m

Field Name	Туре	Required	Description
	stops.zone_id		zones, create a record in fare_rules.txt for e destination_id.
			Example: The origin_id and destination_i used together to specify that fare class "b" is valid between zones 3 and 4, and for travel between zon fare_rules.txt file would contain these recon class:
			<pre>fare_id,,origin_id,destination_id b,,3,4</pre>
			b,,3,5
contains_id	ID referencing stops.zone_id	Optional	Identifies the zones that a rider will enter while u class. Used in some systems to calculate correct $f \epsilon$
			Example: If fare class "c" is associated with all tr route that passes through zones 5, 6, and 7 the fawould contain these records: fare_id,route_id,,contains_id c,GRT,,6 c,GRT,,6 c,GRT,,7 Because all contains_id zones must be matched apply, an itinerary that passes through zones 5 and would not have fare class "c". For more detail, se https://code.google.com/p/googletransitdatafeed/sin the GoogleTransitDataFeed project wiki.

shapes.txt

File: Optional

Shapes describe the path that a vehicle travels along a route alignment, and are defined in the file shapes.txt. Shapes are associated with Trips, and consist of a sequence of points through which the vehicle passes in order. Shapes do not need to intercept the location of Stops exactly, but all Stops on a trip should lie within a small distance of the shape for that trip, i.e. close to straight line segments connecting the shape points.

Field Name	Туре	Required	Description
shape_id	ID	Required	Identifies a shape.
shape_pt_lat	Latitude	Required	Latitude of a shape point. Each record in shapes.txt represershape.
shape_pt_lon	Longitude	Required	Longitude of a shape point.
shape_pt_sequence Non- negativ	negative	Required e	Sequence in which the shape points connect to form the shape. but do not need to be consecutive.
	integer		Example: If the shape "A_shp" has three points in its definition, contain these records to define the shape: shape_id, shape_pt_lat, shape_pt_lon, shape_pt_seq A_shp,37.61956,-122.48161,0 A_shp,37.64430,-122.41070,6 A_shp,37.65863,-122.30839,11
shape_dist_traveled	Non- negative float	Optional	Actual distance traveled along the shape from the first shape por record. Used by trip planners to show the correct portion of the increase along with shape_pt_sequence; they cannot be used

Field Name	Type	Required	Description
			route. Distance units must be consistent with those used in stor
			Example: If a bus travels along the three points defined above for shape_dist_traveled values (shown here in kilometers) wou shape_id, shape_pt_lat, shape_pt_lon, shape_pt_seq A_shp,37.61956,-122.48161,0,0 A_shp,37.64430,-122.41070,6,6.8310 A_shp,37.65863,-122.30839,11,15.8765

frequencies.txt

File: Optional

The frequencies.txt file represents trips that operate on regular headways (time between trips). This file can be used to represent two different types of service.

- Frequency-based service (exact_times=0) in which service does not follow a fixed schedule throughout the day. Instead, operators attempt to strictly maintain predetermined headways for trips.
- A compressed representation of schedule-based service (exact_times=1) that has the exact same headway for trips over specified time period(s). In schedule-based service operators try to strictly adhere to a schedule.

Field Name	Туре	Required	Description	
trip_id	ID referencing trips.trip_id	Required	Identifies a trip to which the specified headway of service applies.	
start_time	Time	Required	Time at which the first vehicle departs from the first stop of the trip with the specified headway.	
end_time	Time	Required	Time at which service changes to a different headway (or ceases) at the first stop in the trip.	
headway_secs	Non-negative integer	Required	Time, in seconds, between departures from the same stop (headway) for the trip, during the time interval specified by start_time and end_time. Multiple headways for the same trip are allowed, but may not overlap. New headways may start at the exact time the previous headway ends.	
exact_times	Enum	Optional	Indicates the type of service for a trip. See the file description for more information. Valid options are:	
			0 or empty - Frequency-based trips. 1 - Schedule-based trips with the exact same headway throughout the day. In this case the end_time value must be greater than the last desired trip start_time but less than the last desired trip start_time + headway_secs.	

transfers.txt

File: Optional

When calculating an itinerary, GTFS-consuming applications interpolate transfers based on allowable time and stop proximity. The transfers.txt file specifies additional rules and overrides for selected transfers.

Field Name	Туре	Required	Description
from_stop_id	ID referencing stops.stop_id	Required	Identifies a stop or station where a connection between routes begins. If this field refers to a station, the transfer rule applies to all its child stops.
to_stop_id	ID referencing stops.stop_id	Required	Identifies a stop or station where a connection between routes ends. If this field refers to a station, the transfer rule applies to all child stops.
transfer_type	Enum	Required	Indicates the type of connection for the specified (from_stop_id, to_stop_id) pair. Valid options are: 0 or empty - Recommended transfer point between routes. 1 - Timed transfer point between two routes. The departing vehicle is expected to wait for the arriving one and leave sufficient time for a rider to transfer between routes. 2 - Transfer requires a minimum amount of time between arrival and departure to ensure a connection. The time required to transfer is specified by min_transfer_time. 3 - Transfers are not possible between routes at the location.
min_transfer_time	Non-negative integer	Optional	Amount of time, in seconds, that must be available to permit a transfer between routes at the specified stops. The min_transfer_time should be sufficient to permit a typical rider to move between the two stops, including buffer time to allow for schedule variance on each route.

pathways.txt

File: Optional

The GTFS-Pathways extension uses a graph representation to describe subway or train, with nodes (the locations) and edges (the pathways).

To go from the entrance (which is a node represented as a location with <code>location_type=2</code>) to a platform (which is a node represented as a location with <code>location_type=0</code>), the rider will go through walkway, fare gates, stairs, etc (which are edges represented as pathways). The proposal also adds another type of location, a generic one called "generic node", to represent for example a walkway crossing from which different walkways can be taken.

Warning: Pathways must be exhaustive in a station. As consequence, as soon as one platform (as stop), entrance or node belonging to a station has a pathway linked to it, the station is assumed to have exhaustive description of its pathways. Therefore, the following common sense rules apply:

- No dangling location: If any location within a station has a pathway, then all locations should have pathways (except for those platforms that have boarding areas).
- No locked platforms: Each platform must be connected to at least one entrance via some chain of pathways. There are very rare stations in the real life where you cannot go outside.
- No pathways for a platform with boarding areas: A platform that has boarding areas is treated as a parent object, not a point. It may not have pathways assigned. All pathways should be for boarding areas.

Field Name	Туре	Required	Description
pathway_id	ID	Required	The pathway_id field contains an ID that uniquely identifies the pathway. The pathway_id is used by systems as an internal identifier of this record (e.g., primary key in database), and therefore the pathway_id must be dataset unique. Different pathways can go from the same from_stop_id to the same to_stop_id. For example, this happens when two escalators are side by side in opposite direction, or when a stair is nearby and elevator and both go from the same place to the same place.
from_stop_id	ID referencing stops.stop_id	Required	Location at which the pathway begins. It contains a stop_id that identifies a platform, entrance/exit, generic node or boarding area from the stops.txt file.
to_stop_id	ID referencing stops.stop_id	Required	Location at which the pathway ends. It contains a stop_id that identifies a platform, entrance/exit, generic node or boarding area from the stops.txt file.
pathway_mode	Enum	Required	Type of pathway between the specified (from_stop_id, to_stop_id) pair. Valid values for this field are: 1: walkway 2: stairs 3: moving sidewalk/travelator 4: escalator 5: elevator 6: fare gate (or payment gate): A pathway that crosses into an area of the station where a proof of payment is required (usually via a physical payment gate). Fare gates may either separate paid areas of the station from unpaid ones, or separate different payment areas within the same station from each other. This information can be used to avoid routing passengers through stations using shortcuts that would require passengers to make unnecessary payments, like directing a passenger to walk through a subway platform to reach a busway. 7: exit gate: Indicates a pathway exiting an area where proof-of-payment is required into an area where proof-of-payment is no longer required.
is_bidirectional	Enum	Required	Indicates in which direction the pathway can be used: • 0: Unidirectional pathway, it can only be used from from_stop_id to to_stop_id. • 1: Bidirectional pathway, it can be used in the two directions. Fare gates (pathway_mode=6) and exit gates (pathway_mode=7) cannot be bidirectional.
length	Non-negative Float	Optional	Horizontal length in meters of the pathway from the origin location (defined in from_stop_id) to the destination location (defined in to_stop_id).

Field Name	Type	Required	Description
			This field is recommended for walkways (pathway_mode=1), fare gates (pathway_mode=6) and exit gates (pathway_mode=7).
traversal_time	Positive Integer	Optional	Average time in seconds needed to walk through the pathway from the origin location (defined in from_stop_id) to the destination location (defined in to_stop_id). This field is recommended for moving sidewalks (pathway_mode=3), escalators (pathway_mode=4) and elevator (pathway_mode=5).
stair_count	Non-null Integer	Optional	Number of stairs of the pathway.
			Best Practices: one could use the approximation of 1 floor = 15 stairs to generate approximative values.
			A positive stair_count implies that the rider walk up from from_stop_id to to_stop_id. And a negative stair_count implies that the rider walk down from from_stop_id to to_stop_id.
			This field is recommended for stairs (pathway_mode=2).
max_slope	Float	Optional	Maximum slope ratio of the pathway. Valid values for this field are: • 0 or (empty): no slope. • A float: slope ratio of the pathway, positive for upwards, negative for downwards.
			This field should be used only with walkways (pathway_type=1) and moving sidewalks (pathway_type=3).
			Example: In the US, 0.083 (also written 8.3%) is the maximum slope ratio for hand-propelled wheelchair, which mean an increase of 0.083m (so 8.3cm) for each 1m.
min_width	Positive Float	Optional	Minimum width of the pathway in meters.
			This field is highly recommended if the minimum width is less than 1 meter.
signposted_as	Text	Optional	String of text from physical signage visible to transit riders. The string can be used to provide text directions to users, such as 'follow signs to '. The language text should appear in this field exactly how it is printed on the signs - it should not be translated.
reversed_signposted_as	Text	Optional	Same than the signposted_as field, but when the pathways is used backward, i.e. from the to_stop_id to the from_stop_id.

File: Optional

Describe the different levels of a station. Is mostly useful when used in conjunction with pathways.txt, and is required for elevator (pathway_mode=5) to ask the user to take the elevator to the "Mezzanine" or the "Platform" level.

Field Name	Туре	Required	Description
level_id	ID	Required	Id of the level that can be referenced from stops.txt.
level_index	Float	Required	Numeric index of the level that indicates relative position of this level in relation to other levels (levels with higher indices are assumed to be located above levels with lower indices).
			Ground level should have index 0, with levels above ground indicated by positive indices and levels below ground by negative indices.
level_name	Text	Optional	Optional name of the level (that matches level lettering/numbering used inside the building or the station). Is useful for elevator routing (e.g. "take the elevator to level "Mezzanine" or "Platforms" or "-1").

feed_info.txt

File: Conditionally required

This file contains information about the dataset itself, rather than the services the dataset describes. In some cases, the publisher of the dataset differs from the agencies. If translations.txt is provided, this file is required.

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]	Field Name	Туре	Required	Description
	feed_publisher_name	Text	Required	Full name of the organization that publishes the dataset. This might be the same as one of the agency_agency_name values.
	feed_publisher_url	URL	Required	URL of the dataset publishing organization's website. This may be the same as one of the agency_agency_url values.
	feed_lang	Language code	Required	Default language for the text in this dataset. This setting helps GTFS consumers choose capitalization rules and other language-specific settings for the dataset.
				To define another language, use the language field in translations.txt.
				Multilingual datasets might be the default language with the original text in multiple languages. In such cases, use the ISO 639-2 language code mul in the feed_lang field. Provide a translation for each of the languages used in the dataset in translations.txt. If all of the original text in the dataset is in the same language, don't use mul.
				For example, a dataset in Switzerland might set the original stops.stop_name field populated with stop names in different languages. Each stop name is written in accordance with the dominant language in that stop's geographic location. Stop names include Genève for the French-speaking city of Geneva, Zürich for the German-speaking city of Zurich, and Biel/Bienne for the bilingual city of Biel/Bienne. Set feed_lang=mul and provide the following translations in

translations.txt:

Field Name	Туре	Required	Description
			 German: "Genf," "Zürich," and "Biel" French: "Genève," "Zurich," and "Bienne" Italian: "Ginevra," "Zurigo," and "Bienna" English: "Geneva," "Zurich," and "Biel/Bienne"
default_lang	Language code	Optional	Defines the language used when the data consumer doesn't know the language of the rider. It's often defined as en, English.
feed_start_date	Date	Optional	The dataset provides complete and reliable schedule information for service in the period from the beginning of the feed_start_date day to the end of the feed_end_date day. Both days can be left empty if unavailable. The feed_end_date date must not precede the feed_start_date date if both are given. Dataset providers are encouraged to give schedule data outside this period to advise of likely future service, but dataset consumers should treat it mindful of its non-authoritative status. If feed_start_date or feed_end_date extend beyond the active calendar dates defined in calendar.txt and calendar_dates.txt, the dataset is making an explicit assertion that there is no service for dates within the feed_start_date to feed_end_date range but not included in the active calendar dates.
feed_end_date	Date	Optional	Refer to the feed_start_date row in this table.
feed_version	Text	Optional	String that indicates the current version of their GTFS dataset. GTFS-consuming applications can display this value to help dataset publishers determine whether the latest dataset has been incorporated.
feed_contact_email	Email	Optional	Email address for communication regarding the GTFS dataset and data publishing practices. feed_contact_email is a technical contact for GTFS-consuming applications. Provide customer service contact information through agency.txt.
feed_contact_url	URL	Optional	URL for contact information, a web-form, support desk, or other tools for communication regarding the GTFS dataset and data publishing practices. feed_contact_url is a technical contact for GTFS-consuming applications. Provide customer service contact information through agency.txt.

translations.txt

File: Optional

Field Name	Туре	Required	Description	
table_name	Type Enum	Required	Defines the dataset table that of The following values are allow • agency • stops • routes • trips • stop_times • feed_info • pathways • levels • attributions	contains the field to be translated. ved: the .txt file extension after
field_name	Text	Required	Provides the name of the field type "Text" can be translated, "Email," and "Phone number" those resources in the correct l	to be translated. Fields with the while fields with the types "URL," can be included here to provide anguage.
language	Language code	Required	value used in languages without. For example, in Switzerland, a	the one from feed_lang in I value of the field is the default out specific translations. a city in a bilingual canton is I but it would simply be called
translation	Text, URL, Email, or Phone number	Required	Provides the translated value f	or the specified field_name.
record_id	ID	Conditionally Required	Defines the record that corresponds to the field to be translated. The value in record_id needs to be a main ID from a dataset table, as defined in the following table:	
			table_name	record_id
			agency	agency_id
			stops	stop_id
			routes	route_id
			trips	trip_id
			stop_times	trip_id

Field Name	Type	Required	Description		
			pathways	pathway_id	
			levels	level_id	
			attributions	attribution_id	
			The following conditions deter	mine how this field can be used:	
			• Forbidden if table_name equals feed_info.		
		• Forbidden if field_value is defined.			
			• Required if field_value	is empty.	
record_sub_id	record_sub_id ID Conditionally Required	-	_	at contains the field when the table on't have a unique ID. The value in ary ID of a dataset table, as	
			table_name	record_sub_id	
			agency	NONE	
			stops	NONE	
		routes	NONE		
			trips	NONE	
			stop_times	stop_sequence	

pathways

attributions

levels

The following conditions determine how this field can be used:

NONE

NONE

NONE

- Forbidden if table_name equals feed_info.
- Forbidden if field_value is defined.
- Required if table_name equals stop_times and record_id is defined.

field	d_val	Lue
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Text, URL, Email, or Phone number

Conditionally Required

Instead of using record_id and record_sub_id to define which record needs to be translated, field_value can be used to define the value for translation. When used, the translation is applied when the field identified by table_name and field_name contains the exact same value defined in field_value.

The field must exactly match the value defined in field_value. If only a subset of the value matches field_value, the translation isn't applied.

If two translation rules match the same record, one with field_value and the other one with record_id, then the rule with record_id is the one that needs to be used.

The following conditions determine how this field can be used:

- Forbidden if table_name equals feed_info.
- Forbidden if record_id is defined.

Field Name	Туре	Required	Description
			• Required if record_id is empty.

attributions.txt

File: Optional

Field Name	Туре	Required	Description
attribution_id	ID	Optional	Identifies an attribution for the dataset, or a subset of it. This field is useful for translations.
agency_id	ID referencing	Optional	The agency to which the attribution applies. If one agency_id, route_id, or trip_id attribution is defined, the other fields must be empty. If none are specified, the attribution applies to the whole dataset.
route_id	ID referencing	Optional	This field functions in the same way as agency_id, except the attribution applies to a route. Multiple attributions can apply to the same route.
trip_id	ID referencing	Optional	This field functions in the same way as agency_id, except the attribution applies to a trip. Multiple attributions can apply to the same trip.
organization_name	Text	Required	The name of the organization that the dataset is attributed to.
is_producer	Enum	Optional	The role of the organization is producer. Allowed values include the following: • 0 or empty: Organization doesn't have this role. • 1: Organization does have this role. At least one of the fields, either is_producer, is_operator, or is_authority, must be set at 1.
is_operator	Enum	Optional	Functions in the same way as is_producer, except the role of the organization is operator.
is_authority	Enum	Optional	Functions in the same way as is_producer, except the role of the organization is authority.
attribution_url	URL	Optional	The URL of the organization.
attribution_email	Email	Optional	The email of the organization.
attribution_phone	Phone number	Optional	The phone number of the organization.

Was this helpful?

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