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The Automotive Information Professionals™

Chrome Construct™

The Vehicle Research, Configuration and Comparison Tool for Automotive Website Development.

September, 2007

Solutions Guide

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TABLE OF CONTENTS

Chrome Construct Service Solutions Guide 3
Overview 3
Chrome Construct Architecture 3
Building Solutions 6
Solutions Overview 8
Vehicle Selection 8
How Vehicle Selection Works 8
Retrieving Vehicles 9
Configuring Vehicles 10
How Vehicle Configuration Works 10
Comparing Vehicles 11
Side-by-Side Comparison 11
Advantage Based Comparison 11
Auto-Equip Vehicles 12
Information Available for a Style 12
Chrome Styles 13
Categories 13
Technical Specifications 13
Attributes Available for a Style 13
Additional Information 24

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Chrome Construct Service Solutions Guide

The purpose of this document is to provide an overview of the Chrome Construct feature set and the application architecture.

Overview

Chrome Construct is a Chrome-hosted web service which allows application developers to embed Chrome's configuration and comparison technology seamlessly into their own application.

Chrome Construct allows developers to build applications which allow users to:

- View information for base and configured vehicles including:
    - Vehicle name and additional basic information such as market class, body type, and drivetrain
    - Consumer-friendly model and style names.
    - Vehicle pricing, including Base MSRP, Base Invoice (US only), and Destination Charge.
    - Option descriptions, codes, and pricing.
    - Standard Equipment.
    - Technical specifications which reflect the vehicle's current configuration.
    - Available Interior and Exterior Vehicle Colors including color swatches as images and as RGB Hex values.
    - Vehicle Images (stock photos).
    - Consumer Information, such as warranty, national rebates and incentives, recalls, and crash test ratings (when available) available both as editorial text and structured text to enable field level access to content such as incentive dollar amounts and percentages.
    - Categories (generic equipment descriptions).
    - New AutoBrief vehicle reviews
- Configure vehicles providing feedback on option availability and price changes.
- Compare the advantages and disadvantages of two or more vehicles, returned in natural-language terms.
- Compare equipment and technical specifications of two or more vehicles side-by-side.
- Automatically equip vehicles similarly to provide more accurate comparisons.
- Customize vehicle selection.
    - Request vehicles that are already configured with the base equipment selected.
    - Constrain vehicle selection by zip code
    - Select vehicles using Chrome standard names or consumer-friendly names.
- Search Chrome's entire new vehicle data set using robust criteria based search criteria (from 1997 forward).
    - The ability to "find comparable" vehicles based on a reference vehicle.
    - Ability to constrain vehicle searches by ZIP Code.
    - Ability to search by categories, technical specifications, prices, vehicle type, etc.
    - Search by market class, drivetrain, number of passenger doors, or body style.

The service is backed by the same technology that enables Chrome's entire professional and consumer facing internet based products. With seamless automatic daily data updates, this product provides all of the flexibility of an API without the overhead of hosting one.

Chrome Construct Architecture

Chrome Constuct is a web service implemented in Java atop Chrome's core configuration and comparison libraries. The web service is designed to be scalable and to allow versatility in data presentation and workflow. Chrome Construct is scalable in that all transactions are stateless. This

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means that as users perform activities, such as selecting optional equipment, each response returns all of the information necessary to continue the transaction.

This service is versatile in that it allows developers to choose which elements are returned on a request to view a style or toggle any options. For example, if on a web page, a designer wishes to only show the vehicle's name and consumer information, the web service request can be filtered to show only these results, thereby limiting the amount of data being returned by each call. This filtering of results is easily enabled or disabled at runtime as part of the request parameter.

The core operations are:

Name	Returns
getModelYears	Provides a list of all available model years for use in building a vehicle selector.
getDivisions	Provides a list of all divisions for use in building a vehicle selector.
getSubdivisions	Returns all available subdivisions for use in building a vehicle selector.
getModelsByDivision	Returns all models by division, for use in building a vehicle selector.
getModelsBySubdivision	Returns all models by subdivision, for use in building a vehicle selector.
getStyles	Provides a list of all styles for a given model for use in building a vehicle selector. The returned configuration state can be used for initiating a vehicle comparison transaction.
getConsumerFriendlyModel NamesByDivision	Returns the consumer-friendly names of all models by division, for use in building a vehicle selector.
getConsumerFriendlyModel NamesBySubdivision	Returns the consumer-friendly names of all models by subdivision, for use in building a vehicle selector.
getStylesByConsumerFriendly ModelNameAndDivision	Returns all styles by consumer-friendly model name and division, for use in building a vehicle selector.
getStylesByConsumerFriendly ModelNameAndSubdivision	Returns all styles by consumer-friendly model name and subdivision, for use in building a vehicle selector.
getConfiguration	Using a configuration state returned from the vehicle selector or from a previously saved configuration, provides access to the complete details of the style including information regarding the vehicle including pricing, options, standards, and tech specs.
getConfigurationByStyleId	Using a Chrome style ID, provides access to the complete details of the style including information regarding the vehicle including pricing, options, standards, and tech specs.
getConfigurationByAutoBuilder StyleId	Using a Chrome AutoBuilder style ID, provides access to the complete details of the style including information regarding the vehicle including pricing, options, standards, and tech specs.

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Name	Returns
getStyleFullyConfigured	Using a configuration state returned from the vehicle selector, provides access to the complete details of the style with the base equipment pre-selected.
getStyleFullyConfiguredByStyleId	Using a Chrome style ID, provides access to the complete details of the style with the base equipment pre-selected.
getStyleFullyConfiguredByAutoBuilderStyleId	Using a Chrome AutoBuilder ID, provides access to the complete details of the style with the base equipment pre-selected.
materializeConfigurationState	Restores a previously saved configuration.
toggleOption	Toggles an option and returns the state of the vehicle including refreshed vehicle information.
selectColor	Selects interior/exterior colors information and adds this information to the state of the vehicle.
getMarketClasses	Returns all available market classes. Included as a reference for use with filtered vehicle selection and searching.
getDataVersions	Returns the data version information for each available locale.
getCategoryDefinitions	Returns all categories for use in filtering side-by-side comparison results and searching.
getTechnicalSpecificationDefinitions	Returns all technical specifications for use in filtering side-by-side comparison results and searching.
getOptionKinds	Returns all available option kinds. Included as a reference for identifying types of options such as packages, engines, etc.
getAdvantageComparisonRuleSetNames	Returns all available advantage based comparison rule set names.
compareAdvantages	Returns natural language advantages and disadvantages.
compareSideBySide	Returns a side-by-side list of categories and technical specifications.
autoEquipStyles	Provides a means of equivalently equipping one or more styles based on a source style.
searchStyles	Provides a means of executing a search of new vehicle styles based on a robust set of search criteria.
validateSearch	Returns all applicable search criterion errors. Includes as a reference for developers to validate that the search criteria is well-formed before executing.
searchModels	Provides a means of executing a search of new vehicle models based on a robust set of search criteria.
getSearchCriterionDescriptors	Returns the search criterion descriptors. Included as a reference for developers when determining valid values for use in executing a search.

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Building Solutions

What's included in the Chrome Construct product?

The Chrome Construct product includes:

- Access to Chrome's Web services as defined by the terms of your license agreement.
- Sample code written in C#, Java, VB, .NET, ColdFusion, and PHP.
- Technical documentation, including this Solutions Guide and a Developer's Guide, which contains a "how-to" section to help you in maximizing your development effort.

What data is included with Chrome Constuct?

The Chrome Construct service can be licensed for all US and Canadian passenger and light duty trucks from the last 10 model years to the current model year for both fleet and retail vehicles. The Chrome Construct data includes all information necessary to correctly configure a vehicle to comply with OEM's Ordering Guides, including style information, style pricing, ordering logic, pricing rules, standards, and technical specifications.

Chrome Construct also includes the ability to conduct searches by feature (all wheel drive, navigation system, transmission, etc.), technical specifications (fuel economy, payload, engine displacement, wheelbase, etc.), by value (horsepower, miles per gallon), as well as search by drivetrain, body style, market class, price, and more.

How often is the data updated?

Daily.

What are the technical requirements for using Chrome Construct?

Your web applications must support the following web services protocols:

- **Web Services Interoperability Basic Profile 1.0** - A published description of what standards and technologies are required for interoperability between web services implementations on different software and operating system platforms (http://www.ws-i.org/Profiles/Basic/2003-08/BasicProfile-1.0a.html).
- **WSDL 1.1 (Web Services Description Language)** - An XML document that describes a web service, including its name, operations, parameters for those operations, and the location of where to send requests (http://www.w3.org/TR/wsdl).
- **SOAP 1.1 (Simple Object Access Protocol)** - A standard for XML messaging and the mapping of data types so that applications adhering to these standards can communicate with each other (http://www.w3.org/TR/2000/NOTE-SOAP-20000508).

What other resources are required?

Chrome Construct requires a developer or development team to create a user-facing application or web site. The web service itself is platform independent. There are no development language dependencies for the application that uses the web service so long as the development language and environment that you choose supports accessing web services.

Is Chrome Construct compatible with other Chrome products?

Yes. The Chrome Construct product is interoperable with other Chrome or third-party products, enabling you to enhance your custom application.

Compatible products include:

- **Automotive Description Service** – This option is available through another Chrome-hosted web service, which translates a vehicle's VIN and/or manufacturer's option codes to a Chrome Style. This translation returns a complete vehicle description and

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all the information a developer would need to configure or compare that vehicle within Chrome Construct.

- **New Vehicle Data Products** – Available for both fleet and retail vehicles, this product option gives you access to new vehicle data in a format that can be easily loaded into a relational database. Used in conjunction with Chrome's Automotive Configuration Service, this data product enables complete customization of vehicle selection and searching.
- **eVox Media** – This media product option enhances your site's application with 360 exterior and interior vehicle images and color change photos.
- **Chrome Video Test Drives** – This media product enhances your site with detailed high-quality action footage that includes informative graphics, voice-over narration, and music, creating a compelling shopping experience.

For information regarding these products or other Chrome offerings, contact your Sales representative.

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Solutions Overview

Chrome Construct provides the functionality required to build robust automotive research and configuration applications without requiring data hosting and complex implementations. The section below describes in detail the type of functionality enabled through this product.

Vehicle Selection

Chrome Construct provides interfaces for selecting vehicle models and styles. Once models have been selected, your system can be designed to display consumer information, AutoBrief reviews, stock photos, optional equipment, standard equipment, and technical specifications. Once a style is selected, your customers can select options to configure the vehicle, and view updated pricing and technical specification information, based on the current configuration.

Chrome Construct includes four options for selecting vehicles:

1. Selection by year, division, model and style using either Chrome's standard model and style names or Chrome's consumer friendly names that match more closely with the manufacturer's branding.
2. Selection by year, subdivision, model and style using either Chrome's standard model and style names or Chrome's consumer friendly names.
3. Selection by ID for interoperability with Chrome's suite of products.
4. Search by feature, technical specification, transmission, and find similarly configured vehicles – you name it!

How Vehicle Selection Works

Selecting by Vehicle

When selecting by vehicle, Chrome offers a series of operations that allow the user to step through the hierarchal selection of a vehicle starting with a model year and progressing to a style.

To enable customization, Chrome provides several alternate forms of the hierarchy as well as the ability to filter the vehicle selection operations by the following attributes:

- Orderability (retail/fleet)
- Zip code
- MSRP range
- Vehicle type (including light duty, medium duty)
- Market class

Searching by Feature

In addition to being able to select models and styles using a selection hierarchy, you can also select vehicles based on an attribute search.

This would include selecting lifestyle-type items of importance to the consumer, such as:

- Body type
- Drivetrain
- Engine type
- Engine cylinders
- Market class

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Search by criterion can also be enabled, so that the consumer can search on specific technical specifications criteria and their corresponding values, such as:

- Number of passenger doors
- Horsepower
- Miles per gallon
- Engine displacement
- Fuel economy
- Payload
- Passenger capacity

Search by feature can also be enabled, so that the consumer could search on specific features they might like to have on a vehicle, such as:

- Front, passenger, or rear air bags
- Passenger airbag shutoff
- Dual climate control
- Navigation system
- Satellite radio
- Entertainment system

Search criteria can be combined to enable both simple and robust searching, including combining criteria to enforce “and” or “either or” searches. For example, one could search for all convertibles with a v6 or V8 engine.

These searches can be executed at either a style or model level. When enacted at the style level, each style is returned that meets the criteria. When enacted at the model level, the model itself is returned with access to all styles meeting the search criteria.

All styles that are returned are auto-equipped with the equipment necessary to meet the search criteria. If the search is for a V8 engine and that engine is optional for a style, the style will be returned with the V8 engine pre-selected.

For the complete list of all search attributes, refer to the Developer’s Guide.

Retrieving Vehicles

Chrome Construct provides several means for retrieving vehicles for the purpose of providing access to research content or to drive configuration.

When using a Chrome Construct vehicle selection workflow, one can choose to load a vehicle with no equipment selected or with the base equipment pre-selected. By pre-loading base equipment, the end user is not required to make as many option selections thereby improving usability.

When used in conjunction with one of Chrome’s other web service or data products, Chrome Construct allows for styles to be access directly by ID.

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Configuring Vehicles

In addition to being able to access vehicle data, Chrome Construct provides the interfaces necessary to configure vehicles.

How Vehicle Configuration Works

The two most important aspects of vehicle configuration are 1) ensuring that the vehicle is accurately configured and priced and 2) providing the feedback necessary to guide users through the configuration process. The Chrome Construct interface provides both.

The service provides an interface that allows options and colors to be selected. This interface is designed for user interaction. As options are selected, the service returns information on the effect of the selection. This information contains everything necessary to communicate the effect of the change to the user and walk the user through the next configuration step.

The returned information includes:

- Changes to the availability of all options.
- Changes to dynamic data such as option pricing and allowed color selections and combinations.
- Steps for resolving conflicts when the selected option requires interaction from the user.

Dynamic Interaction

Each time an option is selected, the updated style is returned in the response. This style contains the new view of the style with all of the data changes that were triggered by all of the options selected up to the last selection. Depending on the preference of the developer, the returned information can be set to return the complete style fully updated or just the content that would have been impacted by the selection. All pricing, option availability, and conflicts are returned. Simply use the new view of the style to display updated data to the user.

Conflict Handling

Chrome Construct makes conflict resolution handling easy. Conflicts may occur for any number of reasons, such as required equipment choices or de-selections of previously selected equipment. To make your user-interface development easier, the service provides feedback on the cause of the conflict, suggested display text, and a list of options that can be toggled to resolve the conflict. You may decide to implement a delta response to reduce the amount of data is returned by the service.

Complete Configuration

Chrome Construct provides access to what Chrome refers to as the “Orderable Vehicle Checklist.” This vehicle checklist allows you to present users with options required for the vehicle to be ordered. In addition to this list, the style itself provides an attribute that indicates whether or not the style is completely configured.

Implementing Save and Retrieve

After each option selection, the response returned contains the current state of the vehicle. This includes the style ID, retail/fleet mode, SEO enabled setting, option selections, and color selections. This state is accessible as a string that can be persisted by your application. This means that at any point during configuration, there is enough information that the configuration can be stopped and restored or resumed at a later time.

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Note: As new data is available, it is possible for option availability to change. When a configuration is restored that is no longer valid with the current data set, the service will attempt to restore as many options as possible and return the style with those options selected.

Comparing Vehicles

Chrome Construct provides interfaces to support side-by-side and advantage based comparisons.

Side-by-Side Comparison

Side-by-side comparisons allow two or more vehicles to be compared. The side-by-side comparison returns the generic equipment availability (categories) and the technical specifications of each of the vehicles.

How Side-by-Side Comparison Works

When two or more vehicles are compared side-by-side, the service will collect all of the categories and the applicable technical specifications for each of the vehicles. These items are returned as part of a group that identifies the display heading for the collection of comparison items. These headings are included in the data. Examples of the headings include “Chassis”, “Dimensions”, and “Accessories”.

The categories are determined by the standard and optional equipment on the vehicle. Each category comparison will return one of four results as described below:

Standard	Indicates that the equipment referenced in the source is part of the standard equipment of this vehicle.
Available	Indicates that the equipment is optional and the user has not selected it.
Selected	Indicates that the equipment is optional and the user has selected it. This only applies to configured styles.
Not Available	Indicates that the equipment is not standard and not optional.

The technical specifications returned are an aggregate of all technical specifications available across the compared vehicles. The returned result is the value of the technical specification as configured. When the vehicle is not configured, the technical specification value is the base value.

Limiting the Results Returned in a Side-by-Side Comparison

The result set of a comparison can be reduced to just return categories, editorial content, or to just return technical specifications. Within each feature type, the result set can be further limited to specific categories and technical specification titles. Included in the service are lookup operations that provide a list of all available categories and technical specifications.

Advantage Based Comparison

Advantage based comparisons allow two vehicles to be compared highlighting the advantages and disadvantages between the vehicles using natural language descriptions.

There are two possible comparison states:

1. **Advantage** (indicates that the primary vehicle is better than the comparison vehicle).
2. **Disadvantage** (indicates that the primary vehicle is worse than the comparison vehicle).

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For example:

Advantages

The 2007 Acura TL 4dr Sdn AT Navigation has the following advantages over the 2007 Honda Accord Sdn 4dr V6 AT EXL:

- 14 more horsepower (258 vs 244).
- 22 more ft/lbs of torque (233 vs 211).
- Auto-on headlights standard, versus not available.
- Navigation system standard, versus not available.

Disadvantages

The 2007 Acura TL 4dr Sdn AT Navigation has the following disadvantages over the 2007 Honda Accord Sdn 4dr V6 AT EXL:

- As configured, the MSRP is $8725.00 greater ($36125.00 vs $27400.00).
- 17 less miles cruising on the highway (479 vs 496).
- 201 pound(s) more base curb weight (3636 vs 3435).

Auto-Equip Vehicles

In order to enable comparisons of equivalently equipped vehicles, Chrome Construct provides a means of configuring one or more styles to match a source style. This feature can be used with both side-by-side and advantage based comparisons as well as for accessing equivalently configured vehicles for research and pricing.

Information Available for a Style

Chrome Construct provides an interface for getting a Chrome Style based on a Style ID. The interface allows the style to be retrieved in either retail or fleet mode and with or without special equipment options (SEOs) displayed. These parameters are specified per request.

You can specify in your return parameters whether or not you wish to retrieve the following types of information:

- Standards
- Options
- Option Descriptions
- Special Equipment Options
- Colors
- Invalid Colors
- Editorial Content (AutoBrief Reviews)
- Consumer Information
- Structured Consumer Information
- Configuration Checklist
- Additional Images
- Technical Specifications
- Filtered Technical Specification Title IDs.

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Chrome Styles

What is a Chrome Style?

A Chrome Style is a specific vehicle within a manufacturer's model, having a unique body design (such as coupe or wagon), trim (GE, XLT, XLT Sport), or other major distinguishing characteristics, such as unique drivetrain, transmission, wheelbase, or fuel type. The general rule is that there is one style per unique Base MSRP.

Chrome Construct accesses all vehicle information including pricing, standards, options, and technical specifications at the style level. The Chrome Style is uniquely identified within Chrome's data by a Chrome Style ID.

Categories

Chrome maintains a list of generic equipment descriptions called categories. Categories are assigned to both standard equipment and optional equipment. The generic descriptions are standardized across all styles.

Categories are maintained by Chrome's data department. Periodically new categories will be added based on consumer interest and industry trends. As of this printing there are over 225 available categories. The current list of categories is available within the Chrome Construct interface.

Technical Specifications

All performance data and vehicle specifications are available in the technical specifications of the style. There is an interface provided as part of the service that allows access to the complete list of technical specifications. The technical specification values are based upon the current vehicle configuration. For example, when a user selects an upgraded wheel and tire package, the appropriate wheel and tire dimensions are displayed. This is true for all specifications that can be affected by options, including: weights, dimensions, horsepower/torque, and towing capacity.

Note: Technical specification availability is determined by the type of vehicle and its attributes. Not all technical specifications are available for all styles.

Attributes Available for a Style

Chrome Construct can retrieve style information for Configuration and Comparison by accessing the following Chrome style attributes. Where the superscript (^{*DD}) appears, this indicates that the data is dynamic based on the current configuration status of the vehicle.

Attribute	Description	Example
Style		
Model Year	The model year of the vehicle.	2007
Manufacturer's Model Code	The manufacturer's model code.	CC10703
Division Name	The vehicle brand name.	Chevrolet
Subdivision Name	Within a division, the name of the group of vehicles by type.	Chevy Pickups
Model Name	The name of the specific name-plated vehicle line.	Silverado 1500

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Attribute	Description	Example
Style Name	The name of the Chrome style. This name includes the trim name and other distinguishing descriptions of the vehicle.	2WD Reg Cab 119.0" Work Truck
Style Name without Trim	The description of the style without the trim.	2WD Reg Cab 119.0"
Trim Name	The manufacturer's branded description of the vehicle within a model group. This designation typically indicates whether more or less equipment is standard.	Work Truck
Consumer Friendly Model Name	The consumer facing name of the model. Often the same as the model name, this name may differ to reflect the manufacturer's branding. For example with the BMW 3-Series 330Ci 2dr Convertible, the consumer model name would be 330Ci.	330Ci
Consumer Friendly Style Name	The consumer facing name of the style. Often the same as the style name, this name may differ to reflect the manufacturer's branding. For example with the BMW 3-Series 330Ci 2dr Convertible, the consumer style name would be 330Ci Cabriolet.	330Ci Cabriolet
Consumer Friendly Drivetrain	This is a description of the drivetrain provided for organizing styles for display to end users.	Rear Wheel Drive
Consumer Friendly Body Type	This is a description of the body type provided for organizing styles for display to end users. Where multiple body types are applicable, this represents the body type description that best describes the vehicle.	Convertible
AutoBuilder Style ID	A unique identifier for the vehicle.	w2007k10m21t1
Generic Model Name	A consumer-friendly version of the Model Name.	Silverado 1500
Style ID	Chrome's Style ID	285716
Generic Style Name	A consumer-friendly version of the Style Name.	Regular Cab, 119" Wheelbase
Drivetrain	The type of drivetrain.	All Wheel Drive
Body Type	The body type.	Regular Cab Pickup - Short Bed
Market Class	The type of market class for the vehicle.	2WD Small Pickup Trucks
Number of Doors	The number of passenger doors on the vehicle.	2
Style Pricing		

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Attribute	Description	Example
Base MSRP *DD	The MSRP of the vehicle with no optional equipment selected.	17,860.00
Base Invoice *DD	The invoice price of the vehicle with no optional equipment selected.	16,877.70
Configured Total MSRP *DD	The base MSRP plus the total of all option MSRP values as configured.	19,045.00
Configured Total Invoice Price *DD	The base invoice price plus the total of all option invoice prices as configured.	18,014.25
Configured Option MSRP *DD	The total of all option MSRP values as configured.	285.00
Configured Option Invoice Price *DD	The total of all option invoice prices as configured.	236.55
Destination Charge	The fee charged for transporting the vehicle to the dealer from the manufacturer or port of entry.	900.00
Price State	This is an indicator as to whether the price of the vehicle is the actual price (confirmed), estimated, or unknown. The price of the vehicle will be estimated or unknown prior to the OEM releasing the initial pricing information.	Confirmed
True Base Price Indicator	On a style, this is an indicator that no required option will affect the total price of the vehicle, and that the base price on the style reflects the actual MSRP.	Yes
Standard Equipment		
Standard Equipment Description	The description of the equipment item. Standard equipment is always available on a vehicle and is included in the base price. Note that standard equipment can be overridden by an option.	Air conditioning, dual-zone, manual.
Header	The logical heading for standard equipment. It is provided for display purposes. For example "MECHANICAL", "EXTERIOR", "INTERIOR".	INTERIOR
Categories	These are the generic equipment descriptions associated to the standard equipment items.	Air Conditioning

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Attribute	Description	Example
Optional Equipment		
Chrome Option Code	A unique identifier for the option within a Chrome style. The Chrome option code is required for vehicle configuration but is not intended for display. This option code is based on the manufacturer's option code but is occasionally different in order to preserve uniqueness.	LM7
Special Equipment Indicator	This is an indicator that the option is a special equipment option.	No
Option Descriptions		
Manufacturer's Option Code	The manufacturer's option code. Where an option does not have an OEM option code, this indicates that this is not a manufacturer's option. Such options are carried to represent essential configuration information for which the manufacturer carries no code.	LU3
Primary Option Name	This is a short description of the option name.	ENGINE, VORTEC 4.3L V6 MFI
Extended Option Description	This is an extended description of the option. For packages this includes the complete description of the equipment available as part of the package.	(195 hp [145.4 kW] @ 4600 rpm, 260 lb-ft of torque [351.0 N-m] @ 2800 rpm) (STD)
Description of Enforced Ordering Logic	This is a verbal description of restrictions and inclusions enforced by Chrome's configurator when selected.	(Requires C*10*03, CC10553 or CC10753 models. Not available with (VYU) Snow Plow Prep Package or (Z82) heavy-duty trailering equipment.)
Description of Un-enforced Ordering Logic	This is a verbal description of restrictions and inclusions not enforced by Chrome's configurator. This includes descriptions of regional availability.	
Price Notes	These are notes specifically regarding the pricing of the option.	*CREDIT*
Header	The logical group name for the option, provided for display purposes.	ENGINE
Unique Type Filter	An indicator provided to allow developers to group mutually exclusive options together for presentation. Options with the same unique type filter are mutually exclusive of each other.	W

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Attribute	Description	Example
Option Kind ID	This is a classification used to identify an option. The primary purpose of this data is for identifying options that can satisfy groups within the complete vehicle checklist used for configuring vehicles. For some custom applications it can be used to identify an option as a package.	6
Option Pricing		
Invoice Price *DD	The invoice price of the option as currently configured.	-784.35
MSRP *DD	The MSRP of the option as currently configured.	-945.00
Price State	This is an indicator as to whether the price of the option is the actual price (confirmed), estimated, or unknown. The price of the option will be estimated or unknown prior to the OEM releasing the initial pricing information.	Confirmed
Price Varies	This is an indicator that the option's price could vary, based on the selection of other options.	N
Price Reason	This is the condition under which the price applies.	
Categories	These are the generic equipment descriptions associated to the optional equipment items.	ENGINE
Technical Specifications		
Title	The description of the technical specification.	As Spec'd Curb Weight
Value *DD	The value for the technical specification for the style.	4329.00
Header	The logical group name for the technical specification provided for display purposes.	WEIGHT INFORMATION
Measurement Unit	This identifies the unit of measure.	lbs.
Colors and Color Availability		
Manufacturer's Exterior Color Name	The manufacturer's exterior color name.	Blue Granite Metallic
Manufacturer's Interior Color Name	The manufacturer's interior color name.	Dark Titanium

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Attribute	Description	Example
Secondary Exterior Colors (includes: lower body and top colors)	Where a style has a lower body color or a top color for a convertible, this is the color name and code for the secondary color.	Black (Top)
Exterior Trim Colors (includes: wheel flares, accent colors, stripes etc.)	Where a style has accent colors, this is the description of the accent colors. Where there is a choice in accent color, the color codes are provided.	Title: Wheel Flare Name: Light Pewter (Note that these are returned as title/name pairs)
Exterior and Interior Color Combinations *DD	These are the valid combinations of interior, exterior and trim colors available with the current configuration.	
Exterior Color Swatches	These are gif files that represent the RGB values of the manufacturer's exterior colors.	5q6ec.gif
Exterior Color Swatch RGB Hex Values	The RGB Hexadecimal code for the color.	0C0031
Generic Color Names	These are generic color names for each exterior color. The generic color names are standardized across all styles.	Blue
Exterior Color Code	The manufacturer's exterior color code.	46U
Interior Color Code	The manufacturer's interior color code.	88V
Editorial Content		
Model Strengths	The core strengths of the vehicle.	Refinement; interior appointments; fuel economy; tow rating; available luxury feature
Model Changes	A brief synopsis on what has happened to the model from last model year to this model year. This section can refer to new equipment, changes in styling, advances in technology (fuel efficiency, safety, etc) and overall pricing.	The Chevy Silverado has been completely redesigned for 2007, with more attention to interior appointments, luxury features, and driving refinement. More than before, it can be equipped to fit a wide range of roles, from casual hauler to weekend tow vehicle to serious work truck, because of a new packaging philosophy that allows two different interior themes. Like its forbears, the new Silverado is available in a wide range of combinations, determined from three different cab styles, three cargo box lengths, three trim levels, five

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Attribute	Description	Example
		suspensions, and various V6 and V8 engines. The new Silverado is built on a new fully boxed frame and is three inches wider at the front wheels and an inch wider at the back wheels for improved stability, while a new coil-over-shock front suspension design and new rack-and-pinion steering unit bring improvements in ride and handling. The Stabilitrak stability control system is available on the Silverado for the first time. Warranty coverage is increased for 2007, with a new five-year or 100,000-mile powertrain warranty that's fully transferable and includes roadside assistance for the full period. The former Silverado is still being sold for 2007 as the Silverado Classic, and to avoid confusion, the new trucks are being referred to by their factory designation, GMT900, by some dealerships.
Model Value	This section details what value this model brings to the consumer, in other words, “why should I buy this model vs. another one in its class”?	To cater to the wide range of customers and uses for full-size pickups, Chevrolet is wisely offering two completely different interiors for the new Silverado, resulting in products that are both functional and as completely luxurious as the customer demands. Prices are very competitive, with extended cab models beginning at $22,705 while crew cabs start at $26,100 and the base regular cab in work truck trim starts at only $17,860. Chevrolet claims that the Silverado is the most dependable and longest lasting pickup truck model, and points to J.D. Power's Initial Quality Survey (IQS) as evidence. For 2006, the model topped the IQS's Large Pickup category. With the highest tow rating among light-duty pickups (up to 10,500 pounds), and class-leading V8 fuel economy of up to 21 mpg, the Silverado is very competitive among full-size pickups.
Model	This section provides a summation of	Although the Silverado has been

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Attribute	Description	Example
Overview	the vehicle which reviews aspects of the strengths, changes and value mentioned before. It also serves as a finishing statement by informing the consumer of all the vehicle highlights.	completely redesigned, what most separates it from the outgoing Silverado (Classic) is inside the cabin. The new interior offered on the top LTZ trim is similar to that currently offered on GM's full-size sport-utility vehicles such as the Chevrolet Tahoe, and offers standard luxury features like power heated front leather seats, six-disc CD/MP3-capable audio system, and heated windshield washers, while top crew cab LTZ models add rain-sensing wipers and a rear-seat audio system. LTZ models are further differentiated by a completely different instrument panel and door panels, a huge, 20.1-liter center console storage area, and upgraded five-liter glovebox. Ultrasonic rear parking assist is available. The work truck and LT trims are equipped on more of a budget for those who plan to use their pickup for utility, with a more basic interior treatment. These trims have still been upgraded with a new double glovebox design, larger control knobs, and a lockable in-seat storage bin that's large enough for a laptop computer and has a built-in 12-volt power outlet. The LT adds most popular equipment like air conditioning, cruise control, and a CD/MP3 audio system, and an $895 1LT convenience package brings more luxury in the way of dual-zone climate control, a remote starting system, and steering-wheel audio controls. Seating has been improved all around. A new stadium-style, folding rear seat, which is split 60/40 and has a fold-down center armrest, is standard on the crew cab and available on the extended cab. Rear legroom has been improved on extended cab models and access is now improved thanks to rear access doors that open 170 degrees. Each trim level is available in either 2WD or an on-demand 4WD system with locking rear differential. A 195-hp, 4.3-liter V6 is standard on WT regular cab and 2WD extended cab

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Attribute	Description	Example
		models, while a 295-hp, 4.8-liter V8 is standard on WT 4WD extended cab, LT regular cab and extended cab models, and WT and LT crew cab models. A 315-hp, 5.3-liter V8 with Active Fuel Management, a system that automatically shuts down half of the cylinders during light-load driving, is standard on LT crew cab and all LTZ body types. That 5.3-liter V8 is available as an option on all other models, while there's also a FlexFuel version that adds E85 compatibility. Thanks to Active Fuel Management, the 5.3-liter gasoline Silverado is rated at 16 city, 21 highway, the same as the base 4.3-liter V6 and one of the best figures in its class. As part of the maximum trailering package, a 367-hp (and 375 lb-ft), 6.0-liter V8 is available on LT and LTZ extended and crew cab models. This engine has variable valve timing and Active Fuel Management. The package also includes a heavy-duty rear axle, locking differential, heavy-duty cooling system, and high-capacity transmission. Each of the five suspension systems available on the Silverado are tailored for particular driving situations, and each has a completely different character. The Z83 delivers the best ride, while the Z85 upgrades for improved handling and towing capacity. The Z71 is the option for those who plan to take their Silverado off-road, and for those wanting optimized street performance there's the Z60, which includes 20-inch wheels. Cargo bed lengths are 5'-8" for the short bed, 6'-6" for the standard bed, and 8' for the long bed, and rated payload goes up to 2,160 pounds when properly equipped. The OnStar Generation 7 system is standard on all Silverados, including automatic crash notification and a one-year subscription to the Safe & Sound plan.

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Attribute	Description	Example
Media		
Stock Photo	A stock photo of the exterior of the vehicle provided as a URL to a JPEG that is included as part of the product installation.	http://media.carbook.com/autoBuilderData/ stockPhotors/9493.jpg
Additional Images	Any additional images, including multiple interior and exterior views.	
Consumer Information		
Crash Test Ratings	NHTSA crash test ratings for the vehicle.	NHTSA CRASH TEST RESULTS: Frontal crash ratings: Driver: * * * * * Passenger: * * * * * Side crash ratings: Driver: * * * * Rear Passenger: * * * * * Results based on a 35 MPH frontal crash and 38.5 MPH side crash. Results are reported in a range of one to five stars, with five stars indicating the best crash protection for vehicles within the same weight class. This test used driver and passenger belts and airbags. NHTSA ROLLOVER RESISTANCE RATING: * * * * The Rollover Resistance Rating is an estimate of your risk of rolling over if you have a single vehicle crash. It does not predict the likelihood of that crash. The Rollover Resistance Rating utilizes a "fishhook" maneuver which is a series of abrupt turns at varying speeds to see how "top-heavy" a vehicle is. The more "top-heavy" the vehicle, the more likely it is to roll over. The lowest rated vehicles (1-star) are at least four times more likely to roll over than the highest rated vehicles (5-stars).
Rebates	The manufacturer's rebate information for the vehicle.	One of the following incentives may apply to this vehicle. Regional incentives may vary. Financing Incentive: 2.9% to 4.9%

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Attribute	Description	Example
		Expiration Date: 09/04/2007 Resource: Automotive News 07/20/2007
Recall Notices	These are the recall notices for the vehicle.	NHTSA CAMPAIGN ID: 07V149000 Mfg's Report Date: 04/03/2007 Component: VISIBILITY:GLASS, SIDE/REAR Potential Number Of Units Affected: 38447 Summary: ON CERTAIN PASSENGER VEHICLES, THE REAR QUARTER GLASS ATTACHING FASTENERS MAY PULL THROUGH THEIR MOUNTS AND ALLOW THE GLASS TO SEPARATE FROM THE VEHICLE. Consequence: IF THE GLASS SEPARATES WHILE DRIVING, IT COULD STRIKE ANOTHER VEHICLE OR INJURE A PEDESTRIAN. Remedy: DEALERS WILL INSPECT THE REAR QUARTER GLASS AND REPLACE IT IF NECESSARY. THE RECALL IS EXPECTED TO BEGIN DURING MAY 2007. OWNERS MAY CONTACT DAIMLERCHRYSLER AT 1-800-853-1403. Notes: DAIMLERCHRYSLER RECALL NO. G01. CUSTOMERS MAY CONTACT THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION'S VEHICLE SAFETY HOTLINE AT 1-888-327-4236 (TTY: 1-800-424-9153); OR GO TO HTTP://WWW.SAFERCAR.GOV.
Warranty	The manufacturer’s warranty	Basic:

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Attribute	Description	Example
Information	information.	3 Years/36,000 Miles Drivetrain: Gas Engine 5 Years/100,000 Miles Diesel Engine 5 Years/100,000 Miles Corrosion: 6 Years/100,000 Miles Roadside Assistance: 5 Years/100,000 Miles
Structured Rebate, Warranty, Crash Test Ratings, and Recall Notices	All consumer information is provided both as editorial and structured content.	Name: Cash Incentive Minimum Value: 4000 (Note that these are returned as name/value pairs by type)

Additional Information

Enabling Special Equipment Options

Chrome carries options that are considered to be special equipment options. SEOs are vehicle options that are not commonly ordered or would only be desired on a vehicle needed for a specific application.

Guidelines for Choosing Fleet/Retail Mode and SEO Enabling

For consumer facing applications, it is recommended that style information be retrieved in retail mode with SEOs disabled. These settings are applicable in professional use applications. See below for more information on these settings.

Specifying Fleet vs. Retail

Some vehicles are carried as fleet only, some as retail only, and some are available both for fleet and retail. When a vehicle is available as only fleet or only retail, the vehicle is only available to be retrieved in the respective mode. When a vehicle is available in both modes, the choice can be made to pick the mode in which the vehicle is returned. For example, choosing retail mode will not return any options that are for equipment or processing codes that are only available for order by a fleet manager. Examples of fleet only options include ambulance packages, taxi packages, fleet processing and fleet tracking codes.

Consumer Information

Consumer information is available in two forms; all of the information can be displayed as a single data element, or you can select to display each item of information as separate data elements. An example of this would be to use the cash incentive value to calculate financing options for your customers.

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