

CopyCat Chrome Extension (Available in the near future)

CopyCat is a Chrome extension designed to easily view, validate, and/or download dev and prod HomeDepot and Blinds site beacon and digitalData analytics data.

HD Analytics CopyCat

A Beacon/DDO Downloader
and Console Logging Tool.

Say Trigger Names



Download Analytics Data



Brian/Scenario1

Go To Downloads Dir

Console Log Beacons



Console Log DDOs



Beacon Field Highlighter



Select a Display Format Type



Adobe Charles Hybrid

HD Analytics CopyCat

A Beacon/DDO Downloader and Console Logging Tool.

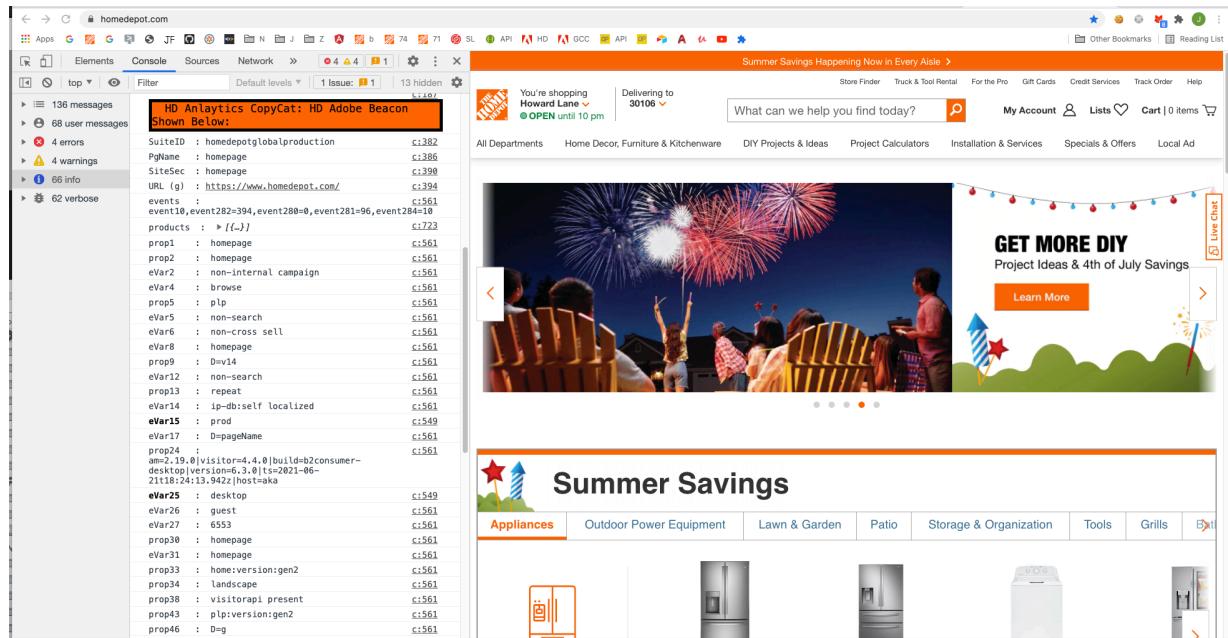
Say Trigger Names

When checked: CopyCat will say the name of each analytics beacon it finds (as you navigate HD and/or Blinds sites).

Note: Make sure your computer volume is enabled and loud enough to hear when selecting this option.

Instant usage help available by hovering over the info icon beside the feature you want help on.

CopyCat lets you see the data right beside the website you are navigating



Note: CopyCat can be used with or without running a proxy (ex:

Charles)

Top 5 Advantages of using CopyCat:

- 1. Data Integrity:** Blocks work related production beacons from being sent to Adobe
- 2. Ease of viewing beacon and associated digital data**
- 3. Ease of downloading beacon and associated digital data**
- 4. Customizable:** View analytics data the way you want to see it
- 5. Realtime high-level beacon validation** (see examples below)

Success Example:

KPI Shield Report:  Success – No errors found

Error Example:

eVar150 : b2c	c:549
eVar162 : browse	c:561
Error: v171 value is not valid	c:519
eVar171 : example_of_bad_data	c:561
eVar172 : n/a,n/a,n/a	c:561
eVar177 : 7ca6879c-12ac-4156-885e-244c2afcdf06	c:561
eVar183 : no cookie	c:561
eVar184 : na	c:561
VisitID : 62718484741883773792628580340486496370	c:418
Activity Map	c:425
page : tools>hand tools>hammers	c:426
link : The Home Depot Logo	c:427
region : deliveryStoreAndZip	c:428
pgType : 1	c:429
	c:439
HD Analytics CopyCat: FED Digital Data Record Shown Below:	
▶ {event: Array(1), page: {...}, legacy: {...}, site: {...}, user: {...}, ...}	c:441
KPI Shield Report: ■ 1 New Error (See Details Above)	c:477

1) Production Analytics Data Integrity:

HD and Blinds Upper management, department managers, and other associates rely on our production Adobe data to gain insights and visibility to how our **customers** are using our sites. Our team is very aware of the need to block/blacklist the sending of prod beacons to Adobe when we are performing **business** related navigation of our sites (Ex: data investigation, QA testing, etc..).

However, I speculate that there are a ton of prod beacons being sent to Adobe by other HD and Blinds teams who are not aware of the need to block prod beacons. **CopyCat solves this issue by automatically blocking all prod analytics beacons from being sent to Adobe on the HD/Blinds work computers that use this extension (with or without using a proxy).**

Note: This is vitally important when associates work remotely (where prod Adobe beacon traffic is not being blacklisted by existing IP blocking filter logic).

Example of the copyCat blocking a prod Adobe beacon as seen in the Chrome developer errors window.

✖ ▶ POST https://swasc.homedepot.com/b/ss/hom_index.js:288
edepotglobalproduction/10/JS-2.19.0/s92431387981931
net::ERR_BLOCKED_BY_CLIENT

Pro Tip: If a business requirement necessitates sending prod beacons to Adobe, you can simply temporarily disable the CopyCat extension and run a test without blocking the prod beacons. Just remember to turn the extension back on after these kinds of tests are done.

2) Ease of beacon and digital data viewing:

Historically our team runs a proxy server (Ex: Charles) to block and/or view beacon data. However, the digitalData used to generate each beacon is unknown to Charles. If the data is a post request, we have to unblock the request just to see the beacon data (**very bad!**). Once we see the post request data, we then have to copy it to an online utility to decode it. **CopyCat solves this issue by automatically writing the decoded analytics data (you are interested in seeing) to the Chrome console (which lives right beside or under the Chrome window you are navigating).**

Note: CopyCat utilizes **Matt Fuller's _T.PUB_SUB object**, which

pairs up the input (digitalData object) and output (Adobe beacon) data pair at the time the beacon is created (assuring data match quality). Nice feature Matt!!!

Example: Key fields and specified highlight fields only:

You can display a condensed output by checking the "Beacon Field Highlighter" check box, enter key fieldsZ you want highlighted, and have the "Console Log Beacons" and "Console Log DDOs" checkbox's unchecked (see example configuration below). Only the fields you specify will be highlighted (if they exist in the beacon) as well as a few unhighlighted key fields.



A screenshot of a web browser window. The address bar shows 'Search Results for hammer at homedepot.com'. The main content area displays a search results page for 'hammer' on the Home Depot website, showing various hammer types and filters. On the right side of the browser, the developer tools are open, specifically the 'Console' tab. The console output shows several beacon key fields highlighted in yellow: 'events event131.event15.event18.event14.event118', 'eVar15 prod', 'eVar25 desktop', 'prop30 search_results', 'prop55 search_results.pl:search=initial_load_search', and 'eVar150 b2c'. There are also other entries like 'jQueryMIGRATE: Logging is active' and 'console.trace'. The bottom of the developer tools shows tabs for 'Console', 'Search', 'Issues', and 'What's New'.

Example: Beacon with specified highlighted fields:



The screenshot shows a web browser window for The Home Depot. The developer tools console tab is open, displaying log messages. Several messages are highlighted in orange, including 'events.event131' and 'eVar15 prod'. The main page shows a kitchen appliance deal and various service icons like delivery and pickup.

```

[{"text": "events.event131"}, {"text": "eVar15 prod"}]

```

Example: DigitalData object:

Note: Check any or all checkbox options you are interested in seeing in the console (any combination works).



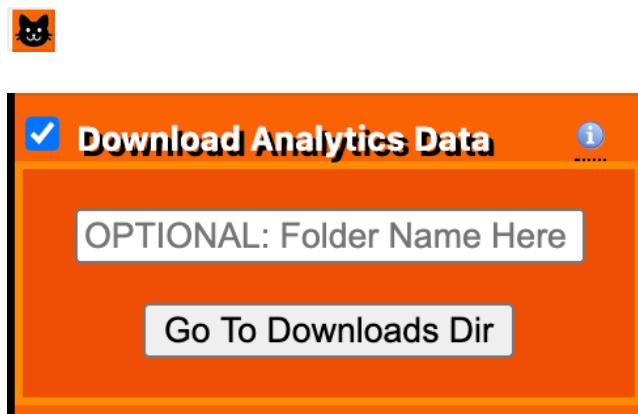
The screenshot shows a Home Depot homepage with various promotional banners and service icons. On the right side, the browser's developer tools are open, specifically the 'Console' tab. A message from 'HD Analytics CopyCat' is displayed, stating 'FED Digital Data Record Shown Below'. Below this message, a large amount of JSON data is shown, representing the digital data record. The data includes information such as event details, page info, onsite search info, category, legacy, and site info.

3) Ease of Downloading beacon data and matching digital data:



When the Download "Download Analytics Data" checkbox is **unchecked**:

The CopyCat icon will be orange and black (see example below).



When the Download "Download Analytics Data" checkbox is **checked**:

The CopyCat icon changes to **red** and the count of downloads

(since turning it on) are shown in the **blue** box below the icon.



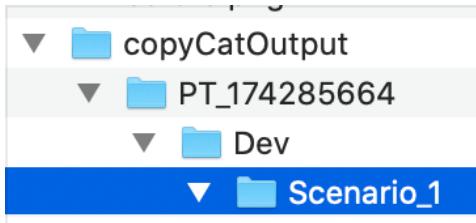
When the “Download Analytics Data” checkbox is checked all beacon/digitalData pairs will be decoded, formatted, and written to your default Chrome download folder under a directory named “**copyCatOutput**”.

All downloaded data is organized with an experience type folder (Ex. **B2B/B2C/B2X**) and device type folder (Ex. **desktop/mobile**).

If the **optional folder name** field is not populated, the data will be placed directly under the “**copyCatOutput**” parent folder.

You can add an option folder name to organize your downloads. This can be a single folder (Ex: PT_174285664) or a multiple folder path by adding **forward slashes** between the folder names.

The multiple folder example below would place the files in the parent directory structure shown below:



Full test example:

Favorites	Name	Size	Kind	Date Added
Downloads	copyCatOutput	--	Folder	Sep 28, 2020 at 5:34 PM
copyCat	PT_174285664	--	Folder	Yesterday at 10:41 AM
projects	Dev	--	Folder	Yesterday at 10:41 AM
Notes	Scenario_1	--	Folder	Yesterday at 10:41 AM
Tickets	b2b	--	Folder	Yesterday at 11:16 AM
GitHub	desktop	21 KB	text	Yesterday at 11:20 AM
MailChimp	mobile	21 KB	text	Yesterday at 11:16 AM
Planning_Center	b2c	--	Folder	Yesterday at 10:47 AM
Refuge	desktop	23 KB	text	Yesterday at 10:48 AM
Dropbox	mobile	23 KB	text	Yesterday at 10:55 AM
HomeDepot	b2c	--	Folder	Yesterday at 11:01 AM
OtherAnalyticGitHubRe...	desktop	21 KB	text	Yesterday at 11:29 AM
Macintosh HD	mobile	21 KB	text	Yesterday at 11:41 AM
Applications	b2x	--	Folder	Yesterday at 11:46 AM
Archive	desktop	21 KB	text	Yesterday at 11:47 AM
Offshore	mobile	--	Folder	Yesterday at 11:50 AM
kpiShield	b2b	--	Folder	Yesterday at 11:18 AM
scripts	desktop	--	Folder	Yesterday at 11:22 AM
common	mobile	--	Folder	Yesterday at 11:22 AM
spec	b2c	--	Folder	Yesterday at 11:28 AM
jxd5f6y	desktop	--	Folder	Yesterday at 11:43 AM
z_additional_chrome-e...	mobile	--	Folder	Yesterday at 11:48 AM
temp	b2x	--	Folder	Yesterday at 11:53 AM
OneDrive - The Home...	desktop	--	Folder	Yesterday at 11:15 AM
AirDrop	mobile	--	Folder	Yesterday at 11:23 AM
Music	b2c	--	Folder	Yesterday at 11:16 AM
iCloud	desktop	--	Folder	Yesterday at 10:53 AM
iCloud Drive	mobile	--	Folder	Yesterday at 11:05 AM
Documents	b2x	--	Folder	Yesterday at 11:46 AM
	desktop	--	Folder	Yesterday at 11:46 AM
	mobile	--	Folder	Yesterday at 11:52 AM
	Scenario_2	--	Folder	Yesterday at 11:53 AM
	b2b	--	Folder	Yesterday at 11:18 AM
	desktop	--	Folder	Yesterday at 10:50 AM
	mobile	--	Folder	Yesterday at 10:50 AM
	b2c	--	Folder	Yesterday at 11:04 AM
	desktop	--	Folder	Yesterday at 11:43 AM
	mobile	--	Folder	Yesterday at 11:43 AM
	b2x	--	Folder	Yesterday at 11:48 AM
	desktop	--	Folder	Yesterday at 11:53 AM
	mobile	--	Folder	Yesterday at 11:53 AM
	Scenario_3	--	Folder	Yesterday at 11:15 AM
	b2b	--	Folder	Yesterday at 11:23 AM
	desktop	--	Folder	Yesterday at 11:16 AM
	mobile	--	Folder	Yesterday at 10:53 AM
	b2c	--	Folder	Yesterday at 10:53 AM
	desktop	--	Folder	Yesterday at 11:05 AM
	mobile	--	Folder	Yesterday at 11:46 AM
	b2x	--	Folder	Yesterday at 11:46 AM
	desktop	--	Folder	Yesterday at 11:52 AM
	mobile	--	Folder	Yesterday at 11:52 AM

Note: Clicking on the “Go To Downloads Dir” opens a finder (Mac) or Explorer (Windows) app taking you directly to your default download folder where the “**copyCatOutput**” resides.

The download data is stored in an easy to read beacon and digitalData JSON file

4) View analytics data the way you prefer



CopyCat allows the user to format the beacon in a format they are used to seeing the data via other tools (Adobe extension and Charles Proxy. A hybrid option is also provided which displays the information in the most succinct format (borrowing from the best features of the other two tools).

All three display types format beacon product strings and DDO digital data as expandable JSON format keeping the display footprint small until you want to drill down to the SKU or Tag you want to investigate further.

Initial collapsed view Examples (minimizes page clutter):

Beacon product string

```
products : ▶ Array(24)
```

DigitalData

```
HD Analytics CopyCat: FED Digital Data Record Shown Below:
```

```
▶ Object
```

Optional Expanded view Examples (allows you to drill down to the SKUs/Fields you want to see):

Beacon product string

```
products : c:723
  (24) [{...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...},
  ▼ {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...}, {...},
  {...}, {...}, {...}] ⓘ
  ▶ 0: {SKU: "306283873", Events: "event204|event205|eve...
  ▶ 1: {SKU: "301688589", Events: "event204|event206", e...
  ▼ 2:
    Events: "event206"
    SKU: "206768945"
    eVars: "eVar134=nearby|eVar133=store>online-n/a:st...
    ▶ __proto__: Object
  ▶ 3: {SKU: "202183856", Events: "event204|event205|eve...
  ▶ 4: {SKU: "315663148", Events: "event204|event205|eve...
  ▶ 5: {SKU: "100054288", Events: "event204|event205|eve...
  ▶ 6: {SKU: "100032790". Events: "event56|event205|even...
```

DigitalData

```

c:441
▼ {__private__: {...}, page: {...}, site: {...}, user: {...}, car
t: {...}, ...} ⓘ
  ► appExperience: [{...}]
  ► cart: {price: {...}}
  ► content: {product: Array(24)}
  ▼ event: Array(1)
    ▼ 0:
      ▼ category:
        primaryCategory: "content display"
        ► __proto__: Object
      ▼ eventInfo:
        eventName: "product impression"
        ► __proto__: Object
        isReported: true
        sourceIndex: 0
        ► __proto__: Object
        length: 1
        ► __proto__: Array(0)
      indexOfEventTrigger: 0
      instanceID: "ccb05d2e-830e-402c-aa0e-bd80cd32285d"
      instanceIsDeepClone: true
      ► page: {pageInfo: {...}. category: {...}. onsiteSearchInf...

```

5) Realtime high-level beacon validation

CopyCat makes a KPI Shield web service request for every HomeDepot and/or Blinds site beacon it encounters. The beacon data is validated by this web service to make sure all **required** fields, for a given trigger type (prop55/c55 value) exists. It also performs a high-level validation of EVERY beacon field value. If any required fields are missing or if any field value is invalid copyCat will report the error message. If no errors were found it reports a success message.

Note: The more people that use copyCat, the more QA validation errors we will uncover in dev before they make their way to prod. Since copyCat validates EVERY beacon fired wherever a user

navigates, we will be able to validate a richer trigger diversity than would be cost effective to do with automated QA test solutions (time/cost prohibitive). Along with our team's great automated testing platforms (ObservePoint and Retina) and core functionality tests, which can apply very specific/discrete (low level and high level) validations, wholistic analytics QA validation is achieved.

Example: Validation Success Reported

If no errors were found during the validation, copyCat outputs the following message at the bottom of the beacons output.

eVar171 : n/a,n/a,n/a	<u>c:301</u>
eVar172 : n/a,n/a,n/a	<u>c:561</u>
eVar177 : 7ca6879c-12ac-4156-885e-244c2afcdf06	<u>c:561</u>
eVar183 : no cookie	<u>c:561</u>
eVar184 : na	<u>c:561</u>
VisitID : 62718484741883773792628580340486496370	<u>c:418</u>
	<u>c:439</u>
HD Analytics CopyCat: FED Digital Data Record Shown Below:	
▶ {event: Array(1), page: {...}, legacy: {...}, site: {...}, user: {...}, ...}	<u>c:441</u>
KPI Shield Report:  Success – No errors found	<u>c:480</u>

Example: Validation Failures Reported

The KPI Shield configuration has specifies its regular expression pattern is as follows

"v177": "^[a-f0-9]{8}(-[a-f0-9]{4}){3}-[a-f0-9]{12}\$",

The value of eVar177 in the successful example above is **valid**
eVar177 : 7ca6879c-12ac-4156-885e-244c2afcdf06

Because it contains

An 8 character hexadecimal string (each character being a number 0-9 or a character a-f)

Followed by three sets starting with a dash (-) and a 4 character hexadecimal string

Followed by a dash and a 12 character hexadecimal string

So if we add or remove one character from its current eVar177 value, it would be considered invalid.

If the eVar177 value was "banana" or a non-hexadecimal character (ex: "7ca68xyz-12ac-4156-885e-244c2afcdf06", it would also be considered invalid.

If the eVar177 value contained **xyz** in its value it would not be valid and copyCat would identify this as an error.

If the eVar150 value is anything other than b2b, b2c, or b2x copyCat would identify this as an error.

In the scenario below, I set the eVar150 value to **abc** (an invalid value)

For the test I placed a breakpoint on the Analytics code just after eVar177 and executed the following in the browser console.

```
s.eVar177 = "7ca68xyz-12ac-4156-885e-244c2afcdf06"  
delete s.prop24  
delete s.eVar25  
s.eVar150 = "abc"
```

In summary I injected two invalid data values (eVar150 and eVar177) and deleted two required fields (prop24 and eVar25)

Below is what CopyCat displays in the following scenario.

eVar99	:	D=mid	c:587
eVar145	:	https://www.homedepot.com/	c:587
eVar146	:	D=g	c:587
Error: eVar150 value is not valid			c:545
eVar150	:	abc	c:575
eVar171	:	n/a,n/a,n/a	c:587
eVar172	:	n/a,n/a,n/a	c:587
Error: eVar177 value is not valid			c:545
eVar177	:	7ca68xyz-12ac-4156-885e-244c2afcdf06	c:587
eVar183	:	no cookie	c:587
eVar184	:	na	c:587
VisitID	:	19660504514322054390077481374889160138	c:433
			c:454
HD Analytics CopyCat: FED Digital Data Record Shown Below:			
▶ {event: Array(1), page: {...}, legacy: {...}, site: {...}, user: {...}, ...}			c:456
Error: prop24 is required but missing			c:470
Error: eVar25 is required but missing			c:470
KPI Shield Report:  4 New Errors (See Details Above)			c:501

Validation is only as complete as the rules that govern it (visibility is the key)!

Therefore, CopyCat displays its validation rules for each specific beacon it validates (see example below).

evar140 : v=g	c:615
eVar150 : b2c	c:601
eVar183 : no cookie	c:613
VisitID : 40411098894280874463490957143203356225	c:447
HD Analytics CopyCat: FED Digital Data Record Shown Below:	c:468
► {__private__: {...}, content: {...}, page: {...}, site: {...}, user: {...}, ...}	c:470
KPI Shield Report: Success – No errors found	c:518
Below are the validations KPI Shield performed:	c:525
Scenario: homedepotglobalproduction_content_display*product_impression_desktop	c:527
KPI Shield validated that the following REQUIRED fields existed:	c:528
► (24) ["cc", "g", "mid", "ns", "nsid", "pageName", "c5", "c13", "v15", "c24", "v25", "v26", "v27", "c34", "c38", "c46", "c55", "c56", "c57", "v99", "v145", "v146", "v150", "v183"]	c:529
KPI Shield also validated all values using the regex shown below:	c:530
► {cc: "^(USD CAD)\$", g: "^(https:// \\. (citibankonline homedepot homedepotde..s)(\\.(shoplocal cashstar))?\\.(com ca)(\\..mx)? \\..*\$", mid: "^[\\d]{38}\$", ns: "^(homedepot home)\$", nsid: "^[\\d]{1}\$", ...}	c:531
Submit validation change requests to Slack channel #kpi_shield	c:532

Allowing the user to see what fields KPI Shield identifies as REQUIRED, for any given account, triggerName, and deviceType scenario, also allows the user to identify and report any additional fields that should be validated as required.

Allowing users to see the regular expressions utilized to validate any given field value, gives the user the opportunity to experiment with the regex and potentially make it more robust/bullet-proof.

NOTE: Even if a user prefers using a different analytics display tool (ex: Charles proxy, DataSlayer, Adobe Experience Cloud Debugger, browser network tab, etc), as long as CopyCat is installed and enable, the KPI Shield validation report is still executed and its results can be viewed in the browser console (to see if any validation errors occurred (see examples below)).

View of console KPI Shield validation when using Debugger for Adobe Analytics 1.4.4



Debugger for Adobe Analytics 1.4.4

Prints to JavaScript console what data is sent to Adobe Analytics.

ID: bdingoflfadhnjohjaplginppjeclmof

[Details](#)

[Remove](#)



prop02	:	no template
prop67	:	nucleus
Currency Code	:	USD
Char Set	:	UTF-8
Version of Code	:	JS-2.19.0
Data Centre	:	swasc.homedepot.com
Organisation ID	:	F6421253512D2C100A490D45@AdobeOrg
Visitor ID	:	36533240093209317822734967776438662715

Activity Map

page: tools>hand tools>hammers

link: Add To Cart

region: browse-search-pods-1

pageIDType: 1

KPI Shield Report: ■ 1 New Error ■ 1 Known Error (See Details Below)

Scenario: homedepotglobaldev_overlay*bss_desktop

Error: eVar15 is required but missing

Known Issue: eVar101 is missing its "podAnchorSku"



View of console KPI Shield validation when using dataslayer 1.5.1

d

dataslayer 1.5.1

Debug and test tag management (Google Tag Manager, DTM, Tealium) and analytics implementations.

ID: ikbablmmjldhamhcldjigniffkkjgpo

Inspect views background page (Inactive)

Details

Remove



hd-qd74.homedepotdev.com/b/Tools-Hand-Tools-Hammers/N-5yc1Vzc98g?NCNI-5&searchRedirect=hammer&semanticToken=d00r20r01122002000_20210722194734736125438... C

Console Sources Network Performance > 56 2 25 13 68 hidden

Messages

KPI Shield Analytics Beacon Validation Report: 1 New Error 1 c:562 Known Error (See Details Below)
Scenario: homedepotglobaldev_browser_results_desktop c:563
Error: eVar15 is required but missing c:571
Known Issue: eVar101 is missing its "podAnchorSku" c:569 c:581

KPI Shield Analytics Beacon Validation Report: 1 New Error (See Details Below)
Known Error (See Details Below)
Scenario: homedepotglobaldev_overlay*bss_desktop c:563
Error: eVar15 is required but missing c:571
Known Issue: eVar101 is missing its "podAnchorSku" c:569 c:581

KPI Shield Analytics Beacon Validation Report: 1 New Error (See Details Below)
Known Error (See Details Below)
Scenario: homedepotglobaldev_content_display*product_impression_desktop c:563
Error: eVar15 is required but missing c:571 c:581

Error in service - https://hd-qd74.homedepotdev..overlay.60326a4...bundle.js:1 com/mcc-cart/v2/info/product?id=undefined&showInfo.media.shipping.promotions.pricing.attributeGroups, SyntaxError: Unexpected end of JSON input at Response.t.<computed>.as.json({overlayId:1626983266591:17}) at VM7964 overlay.60326a4...bundle.js:1:17 at nrWrapper ({overlayId:1626983266591:17})

KPI Shield Analytics Beacon Validation Report: 1 New Error (See Details Below)
Scenario: homedepotglobaldev_error*post_page_error_desktop c:563
Warning: c55 = error*post_page_error c:572 c:581

To See Inventory Choose A Store hammer All Departments Home Decor, Furniture & Kitchenware DIY Projects & Ideas Project Calculators Local Ad & Catalog Klein Tools TEKTON Vaughan Wilton Mallet

716 Results Get It Fast In Stock at Store Today (57) Cumberland & nearby stores Free 2-Day Delivery (70)

Hammer Top Rated

Error System Error \$24⁹⁷ \$29⁹⁷

Department

