

ThingSpace Manage

Case Study





About the Project

ThingSpace Manage (TSM) is an online self-service portal where customers can track, monitor, provision and control the use of their IoT/M2M devices.

They can provision devices (activate, deactivate, suspend, and resume service), monitor usage, track devices, troubleshoot connectivity, configure alerts, purchase SIMs, and much more.



ThingSpace data

39.7M

Managed IoT
Connections

\$318M

Yearly Revenue
Generated



20

Customers
Interviewed



My Role

The entire user experience was redesigned to provide users with a stylish, modern look and feel.

Beyond the new design, We wanted to take a outside-in-approach: forming relationships with customers to understand their goals, motivation and behavior.



Research



Architecture



UX/UI



Prototyping



User testing



Research process

We involved real users in our design process to ensure the products we built meet their diverse use cases and needs



**Boosts overall
revenue and
conversion
rates**



**Reduces risk of
building the
wrong things**



**Increases
customer
satisfaction**



Research methods

Problem Validation

Provides a well understood, clearly articulated customer problem including its context and the people involved.



Contextual inquiry



In-depth interviews with internal stakeholders



In-depth interviews with potential users



User Journey Mapping



Customer surveys

Solution Validation

Determines if the product/feature/design solves the intended customer problem.



Card Sorting



Useability Testing



Design Studio Workshop



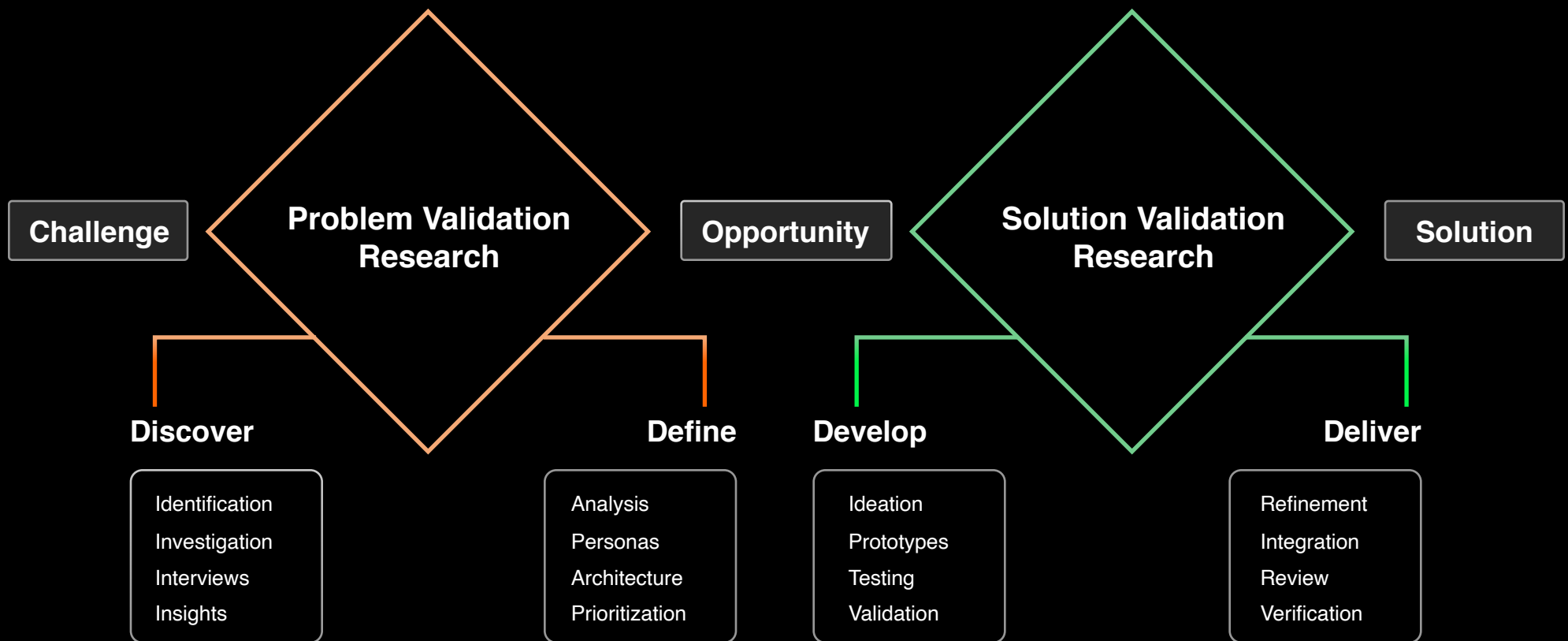
First click testing



Tree Testing



The approach



User Personas



Company

What industry is your company in?

What size is your company?

Goals

What are you responsible for?

What does it mean to be successful in your role?

Role

What is your job role?

What is your title?

What is your salary range?

How is your job role measured?

Describe a typical day in your role.

What skills are required.

Challenges

What are biggest challenges?

The Verizon logo, consisting of the word "verizon" in a sans-serif font with a red checkmark above the 'i'.

Customer interviews

1. Research + Interview



Their business goals



How they use ThingSpace



Devices they manage



Application pain points



Suggestions/feature requests

2. Design + validate



Categorize common themes



Design low-fi wireframes



Conduct A/B testing



Validate design decisions



Create high-fi wireframes

Customers:

Alarm, Coca Cola, Grundfos, Hughes, Kajeet, MachNetworks, Nightengale, Pod Systems, Premier Wireless Solutions, RevX, Rhythmedix, Securecom, Solve Networks, UPS



How we captured feedback

Recorded current customer feedback sessions on-site or via conference

- Learned about their business
- Got a clear understanding about their use case
- Observed and screen recorded application users login and use ThingSpace
- Identified pain points
- Observed competitor platforms



Pain points



**Too many systems
to monitor and
manage devices.**



**Want better use of
screen real estate
more focus on
devices**



**Need faster page load,
task completion and
report time**



**More transparency
when there are errors
or inconsistencies.**



**Need more granular
details of devices
usage, connections
and drops**



Customer feedback

How to gather insights into customers' behaviors, motivations, and goals to inform and strengthen product decisions.

I go to people I trust to learn			Data-filter & more date	Simpler billing process		Create a virtual community
Be approachable & empathetic	No Contract	Make it fast, easy, & customizable	APIs/ location APIs/ geography	Grow with me payment	Self-serve diagnostics	
Show me other use cases	Transparency and flexibility in pricing	Send me a free sample during discussion	Health status visibility macro/micro view	Only pay for what is used auto-rebalancing	Send alerts	Verizon partnership to assist in service, testing, and advertising
Learn	Buy	Get	Use	Pay	Support	Stay



What we learned



**Customer involvement and feedback
make our products better**



**Better understand the learn path - more
robust search through user testing.**



**Customers need to understand why
Verizon IoT cellular connectivity is
valuable to their business.**



**Incorporate validation session design
concepts into the application**



**Design, prototype and validate with
current and potential customers**

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Manage Account

Support

ThingSpace Manage

Devices

Location

Software

Security

Diagnostics

Transactions

Reports

Alerts

Downloads

Admin

New

Devices

All devices
302

Active
267
All

Active
1
Connected

Active
264
Not connected

Deactivated
31

Suspended
2

Device groups

Add devices or attributes

Enter up to 250 comma-separated IDs of the same type: device ID, wireless number, or static IP address

Advanced

302 Devices

0 Selected

Show selected

Actions

<input type="checkbox"/>	Device ID	Device group	Device status	Account	Activation date	Connected	Last connection date
<input type="checkbox"/>	09613597668	Default: 0242078689-00001	ACTIVE	0242078689-00001	6/11/2020 6:05:47 PM	✗	
<input type="checkbox"/>	352733090036441	DanielliangTCM5221	ACTIVE	0242078689-00001	5/6/2020 7:09:30 AM	✗	3/6/2020 10:47 AM
<input type="checkbox"/>	352733090037779	DGTest_040120	ACTIVE	0242078689-00001	2/6/2020 3:14:07 AM	(+)	6/10/2020 4:36:27 PM
<input type="checkbox"/>	352733090044247	QAAutomation	ACTIVE	0242078689-00001	6/10/2020 7:27:01 AM	✗	4/30/2020 2:20:17 PM
<input type="checkbox"/>	352733090061795	DGTest_040120	ACTIVE	0242078689-00001	1/16/2020 5:19:15 PM	✗	5/4/2020 2:23:29 AM

"Need faster page load."

"Need better screen real estate."

"Need better reporting tools."

"Need self-serve support."

"Needs to be easier to manage devices."

"Needs more usage details."

"Needs accurate real-time usage."

"Needs to have updated branding."

SAMPLE TABLE

[illegible]



Manage > Devices

Devices

Search

Bulk search

Filter

302 Results



<input type="checkbox"/>	Device identifier	MDN/MSISDN	IP address	Device status	Connection status	Device group	Service plan
<input type="checkbox"/>	990005878714485	15237082721	100.125.0.51	Active	Disconnected	TCM5201	M2M5MBSHR
<input type="checkbox"/>	A100001574B99A	7326908207	100.125.0.18	Active	Disconnected	QAAutomation	M2M5MBSHR
<input type="checkbox"/>	357812090011674	17326900803	100.125.0.16	Active	Disconnected	QAAutomation	M2M25MBSHR
<input type="checkbox"/>	990005779825737	17326900107	100.125.0.13	Active	Disconnected	QAAutomation	M2M25MBSHR
<input type="checkbox"/>	A000003088DEFA	7326900475	100.125.0.15	Active	Disconnected	QAAutomation	M2M5MBSHR
<input type="checkbox"/>	A000003088DEF8	7322898180	100.125.0.4	Active	Disconnected	QAAutomation	M2M5MBSHR
<input type="checkbox"/>	357812090011898			Deactive	Disconnected	ConnectedDevices_0108	
<input type="checkbox"/>	A100001574B98E	7324842859	100.125.0.54	Active	Disconnected	Default: 0242078689-00001	M2M25MBSHR
<input type="checkbox"/>	A100001574B99B	7324842816	100.125.0.17	Active	Disconnected	QAAutomation	M2M5MBSHR
<input type="checkbox"/>	357812090011872	15004350960	100.125.0.8	Active	Disconnected	QAAutomation	M2M25MBSHR
<input type="checkbox"/>	A100001574B993	7324842178	100.125.0.9	Active	Disconnected	QAAutomation	M2M25MBSHR
<input type="checkbox"/>	359692051248293	17322895622	100.125.0.49	Active	Disconnected	ConnectedDevices_0108	M2M5MBSHR
<input type="checkbox"/>	A100002175A98E	7322891805	100.125.0.36	Active	Disconnected	Default: 0242078689-00001	M2M5MBSHR
<input type="checkbox"/>	A100001574B991	2017873987	100.125.0.10	Active	Disconnected	QAAutomation	M2M5MBSHR
<input type="checkbox"/>	352753090036441	16192079933	100.125.0.3	Active	Disconnected	DanielliangTCM5221	M2M5GB
<input type="checkbox"/>	357812090011666	17322891529	100.125.0.19	Active	Disconnected	QAAutomation	M2M25MBSHR
<input type="checkbox"/>	357812090011625	12017878289	100.125.0.2	Active	Disconnected	Default: 0242078689-00001	M2M25MBSHR

Show 100 per page

1 2 3 4

Result

Customization

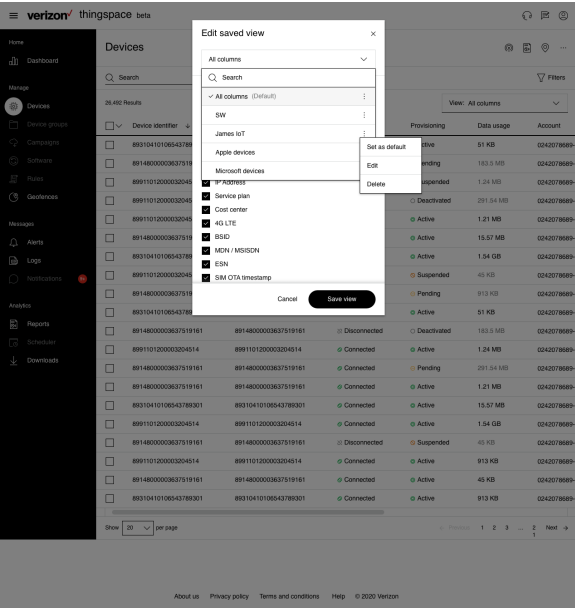
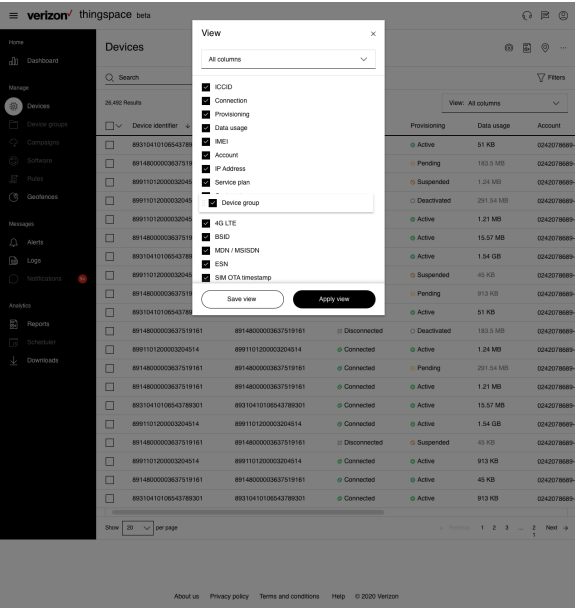
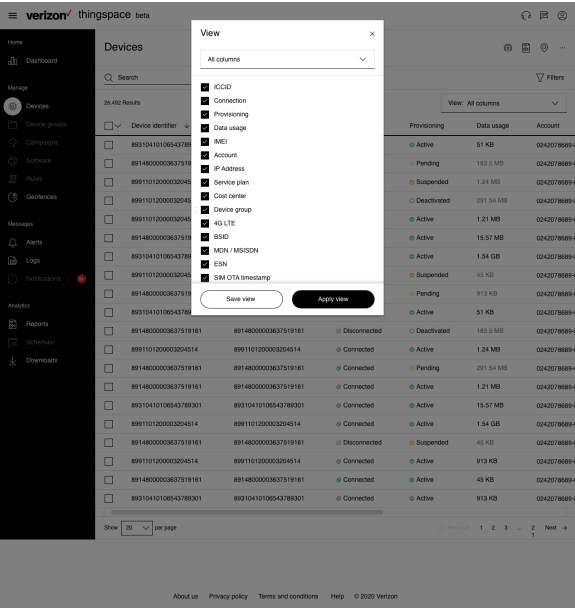


Table view

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HomeDashboard

Manage

Devices

Device groups

Campaigns

Software

Rules

Geofences

Messages

Alerts

Logs

Notifications

Analytics

Reports

Scheduler

Downloads

Devices

36,482 Results

View: All columns

	Device identifier	ICCID	Connection	Provisioning	Data usage	Account
<input type="checkbox"/>	89310410106543789301	89310410106543789301	Connected	Active	51 KB	0242078669
<input type="checkbox"/>	8914800003637519161	8914800003637519161	Connected	Pending	183.3 MB	0242078669
<input type="checkbox"/>	899110120003204514	899110120003204514	Disconnected	Suspended	1.24 MB	0242078669
<input type="checkbox"/>	89911012000320451	89911012000320451	Disconnected	Deactivated	291.54 MB	0242078669
<input type="checkbox"/>	89911012000320451	89911012000320451	Connected	Active	1.21 MB	0242078669
<input type="checkbox"/>	8914800003637519161	8914800003637519161	Connected	Active	15.57 MB	0242078669
<input type="checkbox"/>	89310410106543789301	89310410106543789301	Connected	Active	1.54 GB	0242078669
<input type="checkbox"/>	89911012000320451	89911012000320451	Disconnected	Suspended	45 KB	0242078669
<input type="checkbox"/>	8914800003637519161	8914800003637519161	Connected	Pending	913 KB	0242078669
<input type="checkbox"/>	89310410106543789301	89310410106543789301	Connected	Active	51 KB	0242078669
<input type="checkbox"/>	8914800003637519161	8914800003637519161	Disconnected	Deactivated	183.3 MB	0242078669
<input type="checkbox"/>	899110120003204514	899110120003204514	Connected	Active	1.24 MB	0242078669
<input type="checkbox"/>	8914800003637519161	8914800003637519161	Connected	Pending	291.54 MB	0242078669
<input type="checkbox"/>	8914800003637519161	8914800003637519161	Connected	Active	1.21 MB	0242078669
<input type="checkbox"/>	89310410106543789301	89310410106543789301	Connected	Active	15.57 MB	0242078669
<input type="checkbox"/>	899110120003204514	899110120003204514	Connected	Active	1.54 GB	0242078669
<input type="checkbox"/>	8914800003637519161	8914800003637519161	Disconnected	Suspended	45 KB	0242078669
<input type="checkbox"/>	899110120003204514	899110120003204514	Connected	Active	913 KB	0242078669
<input type="checkbox"/>	8914800003637519161	8914800003637519161	Connected	Active	45 KB	0242078669
<input type="checkbox"/>	89310410106543789301	89310410106543789301	Connected	Active	913 KB	0242078669

show 20 per page

Previous123...2Next

About us

Privacy policy

Terms and conditions

Help

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HomeDashboard

Manage

Devices

Device groups

Campaigns

Software

Rules

Geofences

Messages

Alerts

Logs

Notifications

Analytics

Reports

Scheduler

Downloads

Devices

36,482 Results

View: All columns

Search

All columns (Default)

Licenses view

Sim secure

Software management

Microsoft devices

Create new

	Device identifier	ICCID	Connection	Provisioning	Data usage	Account
<input type="checkbox"/>	89310410106543789301	89310410106543789301	Connected	Active		
<input type="checkbox"/>	8914800003637519161	8914800003637519161	Connected	Pending		
<input type="checkbox"/>	899110120003204514	899110120003204514	Disconnected	Suspend		
<input type="checkbox"/>	89911012000320451	89911012000320451	Disconnected	Deactiv		
<input type="checkbox"/>	89911012000320451	89911012000320451	Connected	Active		
<input type="checkbox"/>	8914800003637519161	8914800003637519161	Connected	Active		
<input type="checkbox"/>	89310410106543789301	89310410106543789301	Connected	Active		
<input type="checkbox"/>	89911012000320451	89911012000320451	Disconnected	Suspended	45 KB	0242078669
<input type="checkbox"/>	8914800003637519161	8914800003637519161	Connected	Pending	913 KB	0242078669
<input type="checkbox"/>	89310410106543789301	89310410106543789301	Connected	Active	51 KB	0242078669
<input type="checkbox"/>	8914800003637519161	8914800003637519161	Disconnected	Deactivated	183.3 MB	0242078669
<input type="checkbox"/>	899110120003204514	899110120003204514	Connected	Active	1.24 MB	0242078669
<input type="checkbox"/>	8914800003637519161	8914800003637519161	Connected	Pending	291.54 MB	0242078669
<input type="checkbox"/>	8914800003637519161	8914800003637519161	Connected	Active	1.21 MB	0242078669
<input type="checkbox"/>	89310410106543789301	89310410106543789301	Connected	Active	15.57 MB	0242078669
<input type="checkbox"/>	899110120003204514	899110120003204514	Connected	Active	1.54 GB	0242078669
<input type="checkbox"/>	8914800003637519161	8914800003637519161	Disconnected	Suspended	45 KB	0242078669
<input type="checkbox"/>	899110120003204514	899110120003204514	Connected	Active	913 KB	0242078669
<input type="checkbox"/>	8914800003637519161	8914800003637519161	Connected	Active	45 KB	0242078669
<input type="checkbox"/>	89310410106543789301	89310410106543789301	Connected	Active	913 KB	0242078669

show 20 per page

Previous123...2Next

About us

Privacy policy

Terms and conditions

Help

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verizon thingspace beta

HomeDashboard

Manage

Devices

Device groups

Campaigns

Software

Rules

Geofences

Messages

Alerts

Logs

Notifications

Analytics

Reports

Scheduler

Downloads

Devices

10 Results

Show only eligible

View: Sim Secure

	Device identifier	ICCID	MDN	License status (Sim Secure)	Provisioning (Sim Secure)
<input type="checkbox"/>	89310410106543789301	8931041010654377777	8176291111	Assigned Lifetime	Active
<input type="checkbox"/>	8914800003637519161	89148000036372222	817673333	Unassigned	Deprovisioned
<input type="checkbox"/>	899110120003204514	899110120003204514	TBA	N/A	Active
<input type="checkbox"/>	89911012000320451	89911012000320451	817673333	Unassigned	Deprovisioned
<input type="checkbox"/>	89911012000320451	89911012000320451	817673333	Assigned Flexible	Active
<input type="checkbox"/>	8914800003637519161	899110120003212345	TBA	Assigned Flexible	Provisioning pending
<input type="checkbox"/>	89310410106543789301	89911012000320451	817673333	Assigned Lifetime	Active
<input type="checkbox"/>	89911012000320451	89911012000327777	817673333	N/A	Active
<input type="checkbox"/>	8914800003637519161	899110120003212321	817673333	Unassigned	Deprovisioned
<input type="checkbox"/>	89310410106543789301	899110120003211111	817673333	Assigned Lifetime	Active

show 20 per page

Previous123...2Next

About us

Privacy policy

Terms and conditions

Help

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Thingspace

Home

Devices

Software

Subscriptions

Users

Monitor

Alerts

Dashboard

Downloads

Logs

Reports

Settings

Campaigns

Costal resources

Services

Policies

Refreshed reports

Reports

Report Filter

Anytime report

DM CIs

Enter up to 10 domains (e.g. META, GOOGLE, or IP address)

Start date

09/01/2021

End date

09/01/2021

Run

Report Filter

How can we narrow your report by filtering by any criteria below.

Accounts

Accounts

Please select from list of accounts.

All Accounts

Attributes

Attributes

Template

Template

Schedule

Schedule

Clear all

Cancel

Filter

<input type="checkbox"/>	Mar 31, 2020 1:53 PM PT	42079689-00003	900008062471854	1MB	<div></div> Normal	N/A
<input type="checkbox"/>	Mar 31, 2020 1:53 PM PT	42079689-00001	351758015123999	10KB	<div></div> Very abnormal	Non-peak usage (4.0% change)
<input type="checkbox"/>	Mar 31, 2020 1:53 PM PT	42079689-00002	351758015123999	1MB	<div></div> Normal	N/A
<input type="checkbox"/>	Mar 31, 2020 1:53 PM PT	42079689-00001	351758015123999	1GB	<div></div> Very abnormal	Non-usage volume (4.4% change)
<input type="checkbox"/>	Mar 31, 2020 1:53 PM PT	42079689-00001	351758015123999	10KB	<div></div> Abnormal	Non-peak usage (4.0% change)
<input type="checkbox"/>	Mar 31, 2020 1:53 PM PT	42079689-00002	900008062471854	1MB	<div></div> Normal	N/A
<input type="checkbox"/>	Mar 31, 2020 1:53 PM PT	42079689-00003	351758015123999	10KB	<div></div> Very abnormal	Non-peak usage (4.0% change)
<input type="checkbox"/>	Mar 31, 2020 1:53 PM PT	42079689-00001	351758015123999	10KB	<div></div> Normal	N/A
<input type="checkbox"/>	Mar 31, 2020 1:53 PM PT	42079689-00002	900008062471854	1MB	<div></div> Very abnormal	Non-usage volume (4.4% change)
<input type="checkbox"/>	Mar 31, 2020 1:53 PM PT	42079689-00003	351758015123999	1GB	<div></div> Abnormal	Non-peak usage (4.0% change)
<input type="checkbox"/>	Mar 31, 2020 1:53 PM PT	42079689-00001	900008062471854	10KB	<div></div> Normal	N/A
<input type="checkbox"/>	Mar 31, 2020 1:53 PM PT	42079689-00002	900008062471854	1GB	<div></div> Very abnormal	Non-peak usage (4.0% change)

10

per page

Previous

1

2

...

21

Next

About us

Privacy policy

Terms and conditions

Help

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Thingspace

Message

Devices

Device groups

Software

Subscriptions

Users

Monitor

Alerts

Dashboard

Downloads

Logs

Reports

Automate

Campaigns

Cloud connectors

Integrations

Rules

Scheduled reports

Reports

Report types

Accounting report

Enter up to 10 device IDs (IMEIs, EUIs, MACs, or IP addresses)

Start date

End date

03/01/2021

03/01/2021

Run as soon as possible

Schedule for later

Report Filter

Accounts

Attributes

Templates

Schedule

Schedule type

Please select a schedule type

Run as soon as possible

Schedule for later

Name

Enter a name to save your report parameters. Name changes will interrupt and restart your report's schedule.

None

Clear all

Cancel

Apply

<input type="checkbox"/>	Mar 31, 2020 - 1:55 PM PT	0342071868-0003	99000000421454	0342071868	Usage	50 price plan	45Cynnet
<input type="checkbox"/>	Mar 31, 2020 - 1:55 PM PT	0342071868-0001	351760513299	0342071868	Usage	50 price plan	45Cynnet
<input type="checkbox"/>	Mar 31, 2020 - 1:55 PM PT	0342071868-0002	351760513299	0342071868	Promo	50 price plan	45Cynnet
<input type="checkbox"/>	Mar 31, 2020 - 1:55 PM PT	0342071868-0003	351760513299	0342071868	SMIS	50 price plan	45Cynnet
<input type="checkbox"/>	Mar 31, 2020 - 1:55 PM PT	0342071868-0001	351760513299	0342071868	Promo	50 price plan	45Cynnet
<input type="checkbox"/>	Mar 31, 2020 - 1:55 PM PT	0342071868-0002	99000000421454	0342071868	Usage	50 price plan	45Cynnet
<input type="checkbox"/>	Mar 31, 2020 - 1:55 PM PT	0342071868-0003	351760513299	0342071868	SMIS	50 price plan	45Cynnet
<input type="checkbox"/>	Mar 31, 2020 - 1:55 PM PT	0342071868-0001	351760513299	0342071868	Promo	50 price plan	45Cynnet
<input type="checkbox"/>	Mar 31, 2020 - 1:55 PM PT	0342071868-0002	99000000421454	0342071868	Usage	50 price plan	45Cynnet
<input type="checkbox"/>	Mar 31, 2020 - 1:55 PM PT	0342071868-0003	351760513299	0342071868	SMIS	50 price plan	45Cynnet
<input type="checkbox"/>	Mar 31, 2020 - 1:55 PM PT	0342071868-0001	99000000421454	0342071868	Promo	50 price plan	45Cynnet
<input type="checkbox"/>	Mar 31, 2020 - 1:55 PM PT	0342071868-0002	99000000421454	0342071868	Usage	50 price plan	45Cynnet

Show

20

per page

Previous

1

2

...

21

Next

About us

Privacy policy

Terms and conditions

Help

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Schedule reports

