
AWS
re:Invent
NOV. 28 – DEC. 2, 2022 | LAS VEGAS, NV

OPN204

Discover Cloudscape, an open-source design system for the cloud

Olga Madejska (she/her)

Head of Cloudscape
AWS

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What we'll cover today

Working backwards from customer needs

Our journey

Design system today

Core features

Result

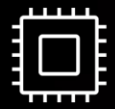
Is Cloudscape right for me?

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Working backwards from customer needs

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AWS



Compute



Storage



Database



Migration



Networking &
Content Deliver



Developer Tools



Management Tools



Media Services



Security, Identity
& Compliance



Analytics



Machine Learning



Mobile Services



AR & VR



Application Integration



Customer Engagement



Business Productivity



Desktop & App Streaming



Internet of Things



Game Development

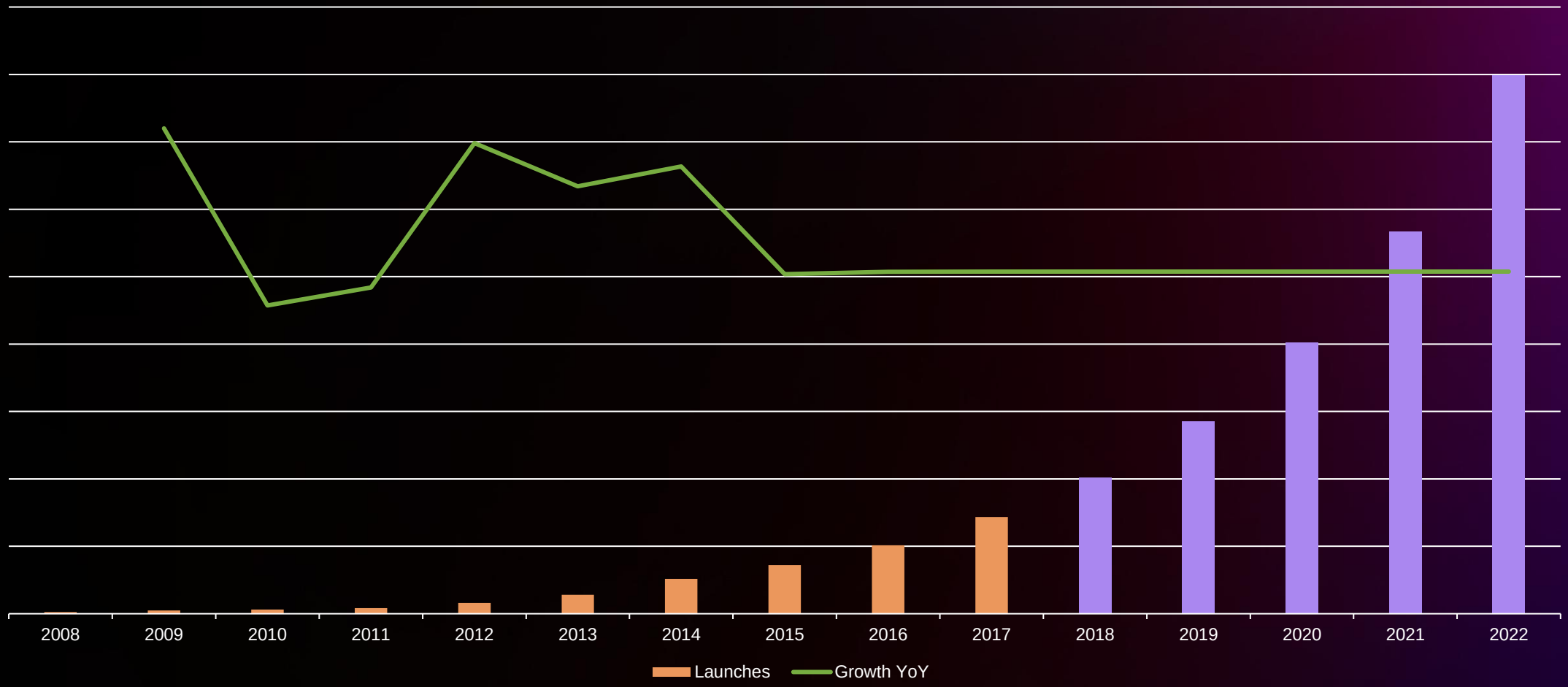


And More...

aws

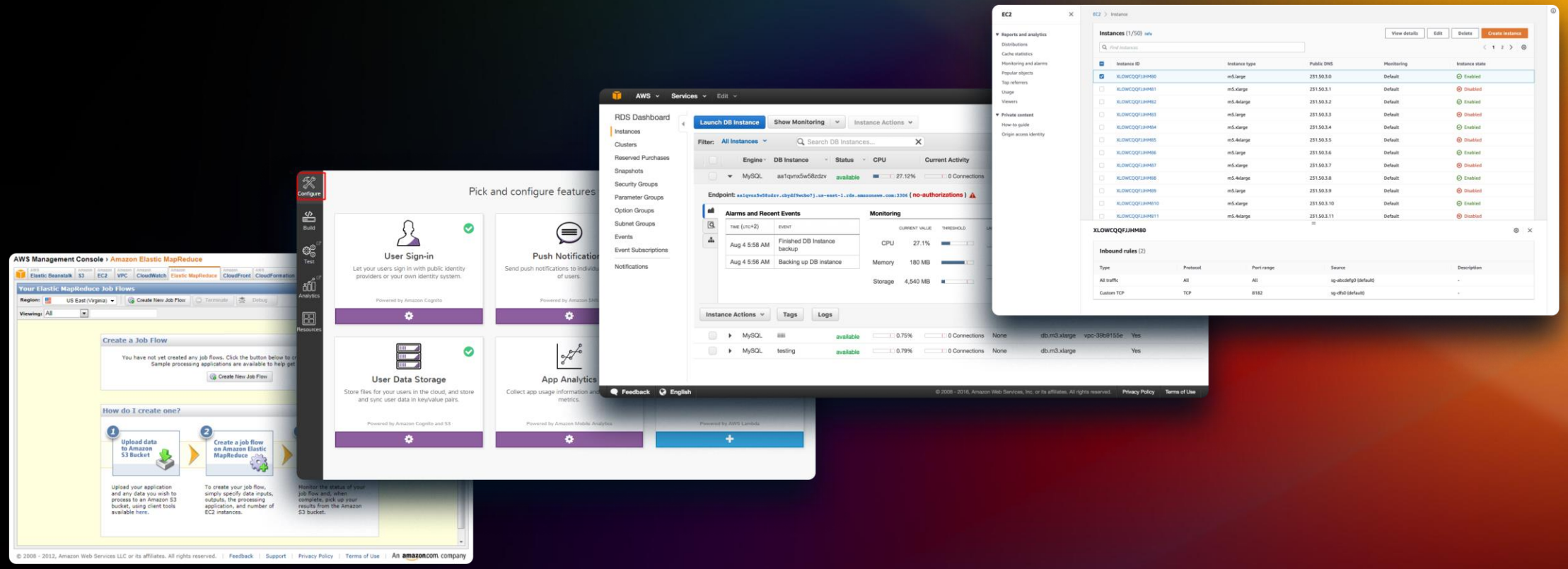
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Scale



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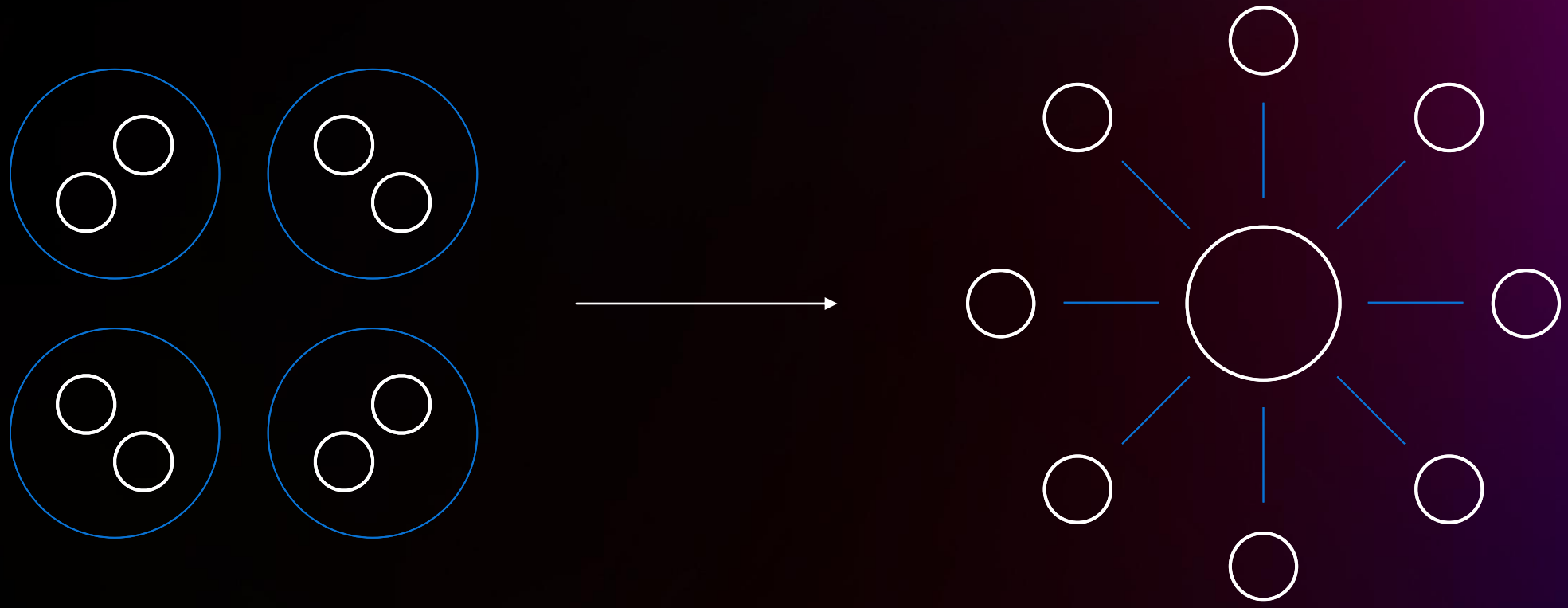
Consistency



2008 → 2021

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AWS teams



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Our journey

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“Many design systems support 1–2 products. When creating a system to support 90+ services, our team faced some incredible challenges that required solutions never invented before. Innovating in the space was such an incredibly rewarding experience!”

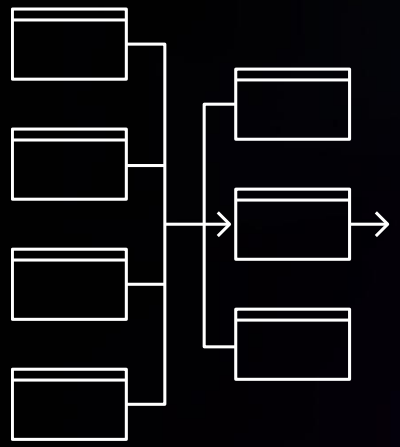
Senior UX Designer

AWS

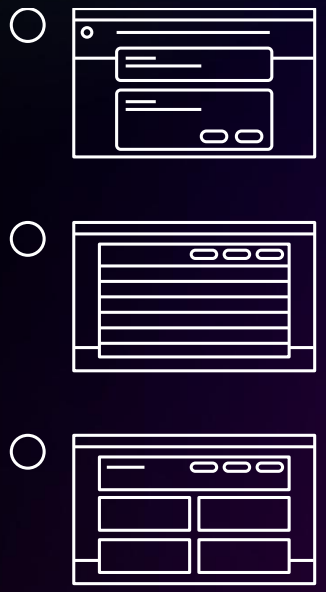
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Building a roadmap

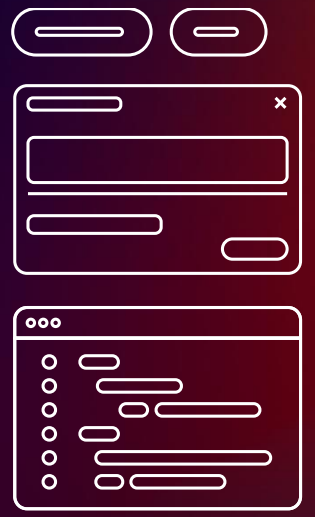
Hero flow



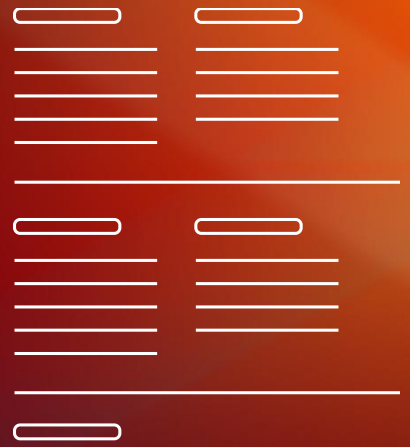
Inventory



Categorization

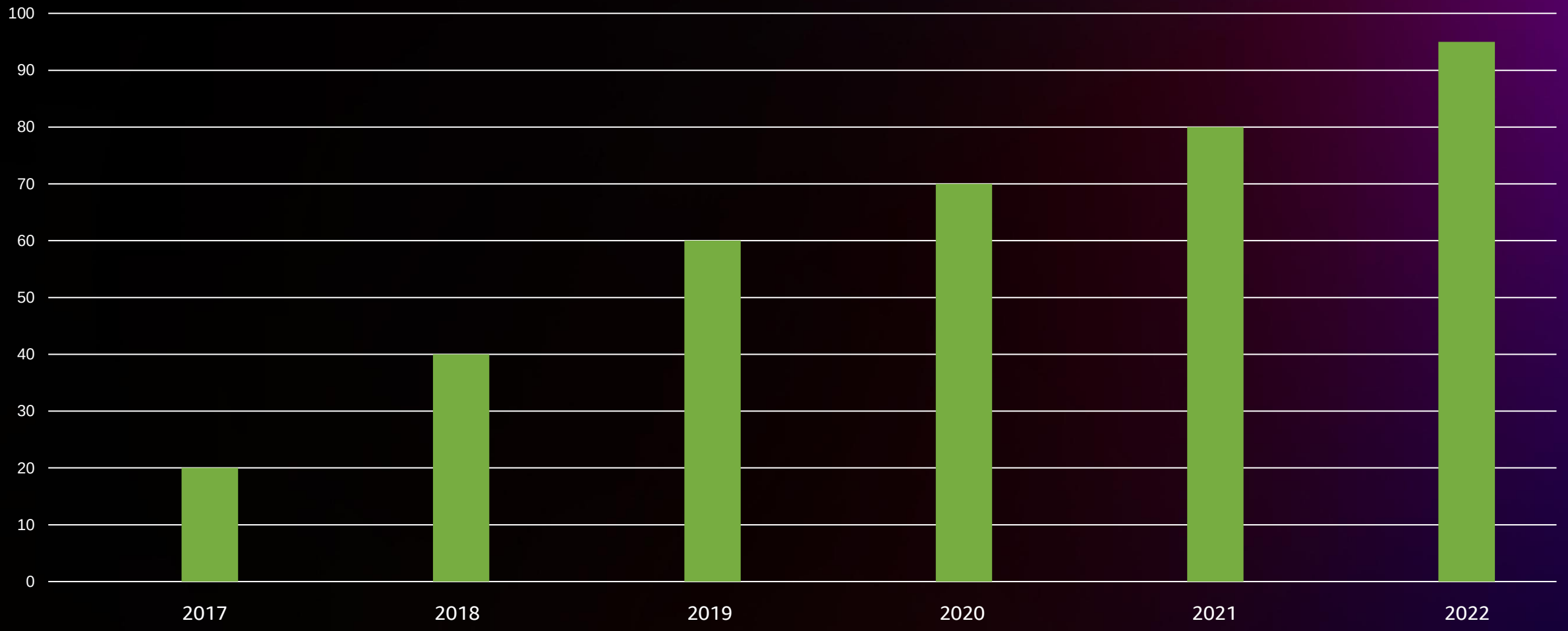


Prioritized list of components



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Launching the system



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07/19/2022

“Our open source effort improved our internal processes while opening a dialogue with the global community. We are better every day because of it.”

Senior Design Technologist

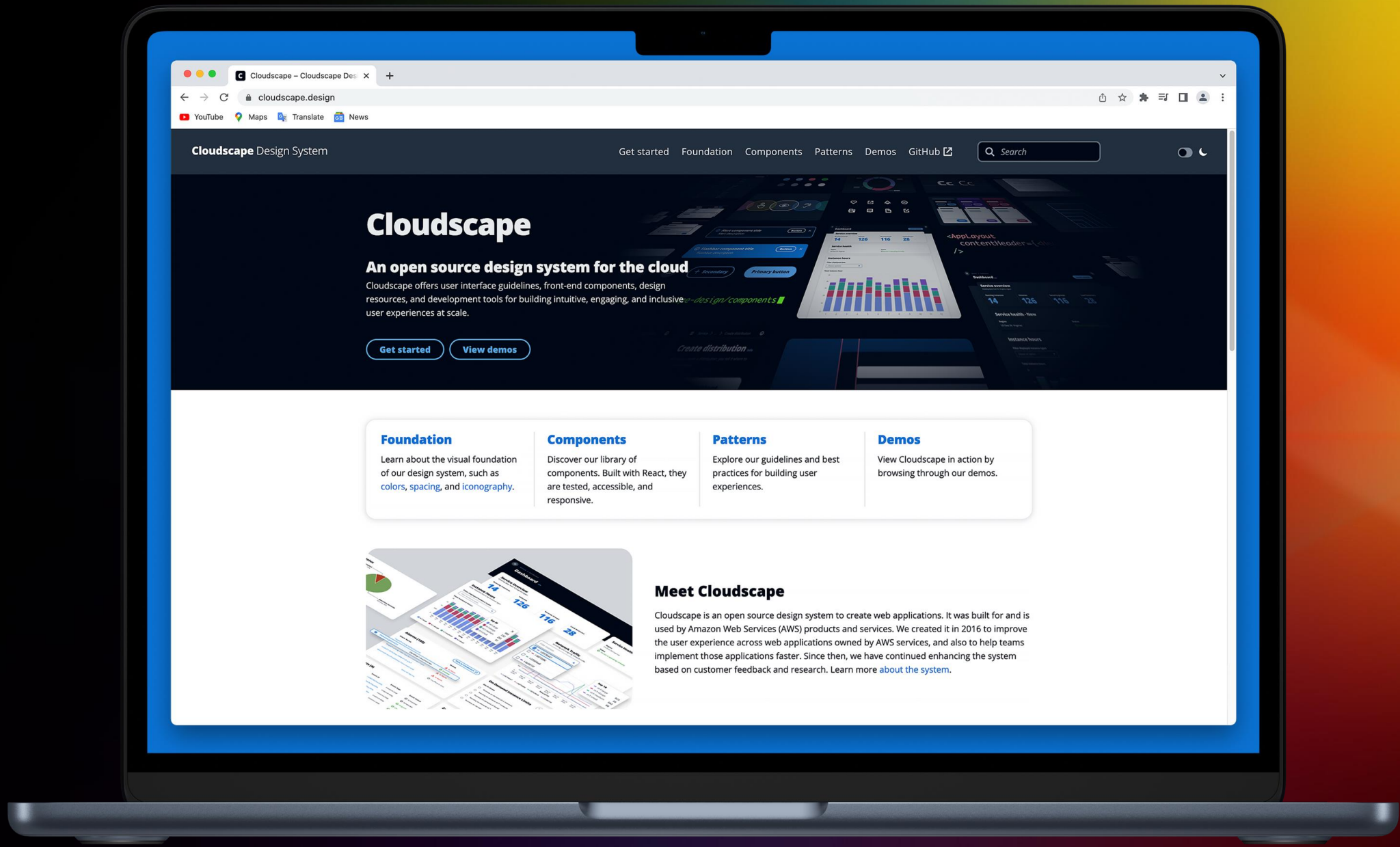
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Design system today

Foundation
Components
Patterns
Demos

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Design system today

Foundation

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Foundation

Overview

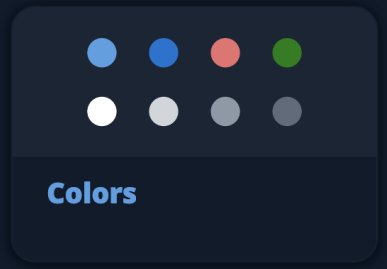
Visual foundation

Colors
Content density
Data visualization colors
Design tokens
Iconography
Layout
Motion
Spacing
Theming
Typography
Visual context
Visual modes
Visual style

Core principles

Accessibility
Responsive design

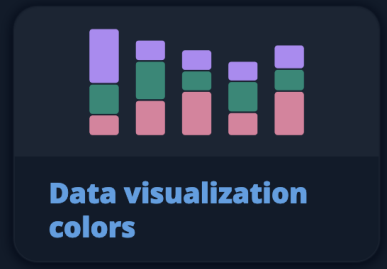
Browse our foundation



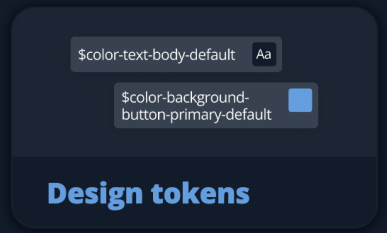
Colors



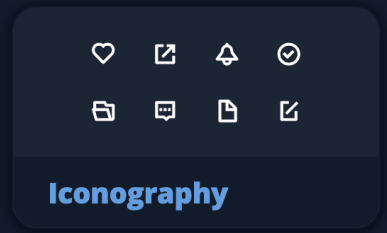
Content density



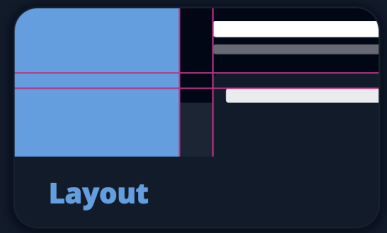
Data visualization colors



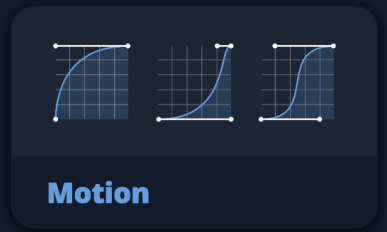
Design tokens



Iconography



Layout



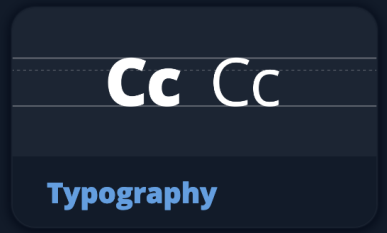
Motion



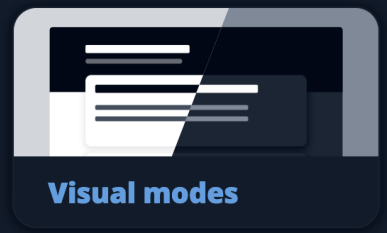
Spacing



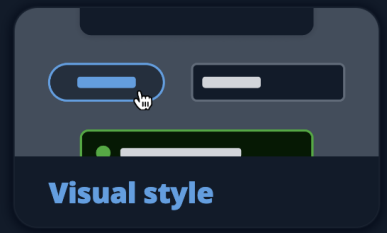
Theming



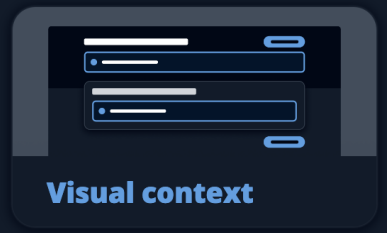
Typography



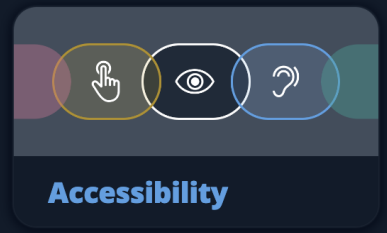
Visual modes



Visual style



Visual context



Accessibility



Responsive design

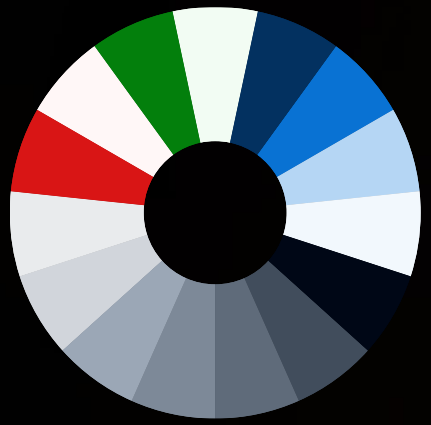
On this page

↳ Overview
↳ Browse our foundation

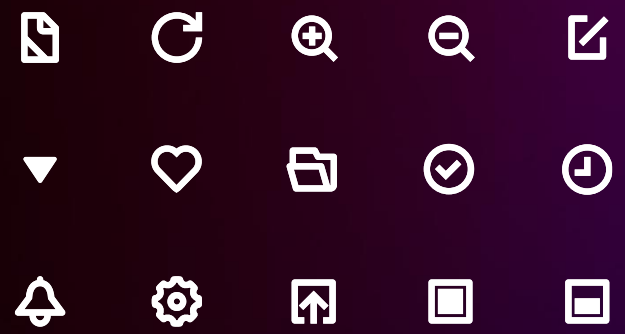
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Colors, typography, icons

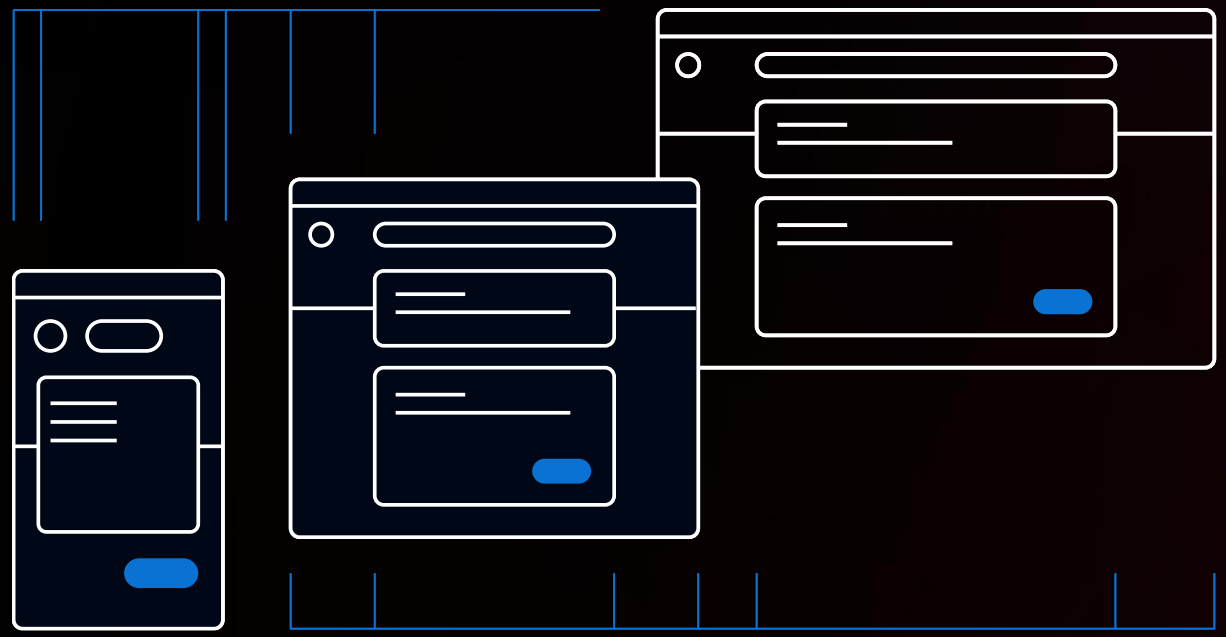


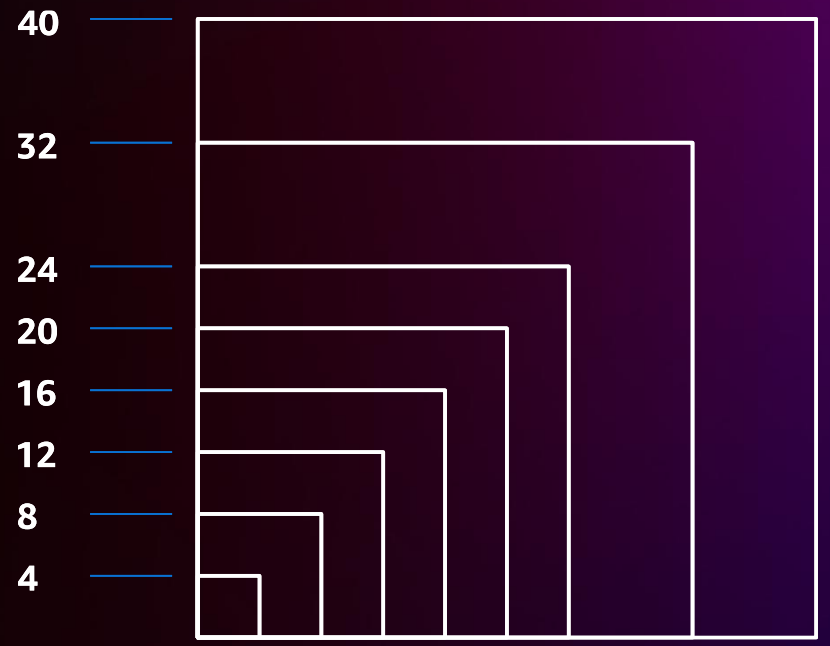
Aa 900 Heavy
700 Bold
Aa 400 Normal
300 Light



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Layout, spacing





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Visual style

Dark fill, without outline

Important elements are inverted to create the greatest contrast with other elements on the page

Primary button

Flash

Light fill, with outline

Emphasized elements have a lighter background, typically accompanied with a darker border of a similar color

Alert

Outline only

Most elements don't have any fill and only have a border or outline



Input

No shadow

Small elements that are used inside other elements don't have a shadow

Input

Button

Alert

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Design system today

Components

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Components

Overview
Alert
App layout
Attribute editor
Autosuggest
Badge
Box
Breadcrumb group
Button
Button dropdown
Calendar
Cards
Charts
Checkbox
Code editor
Collection preferences
Collection select filter
Column layout
Container
Content layout
Copy to clipboard
Date input
Date picker
Date range picker
Expandable section
File upload
Flashbar

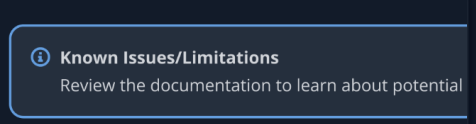
Components overview

Components are built with React and implement the design patterns and guidelines of Cloudscape. All components are tested, responsive, and accessible.

Components (68)

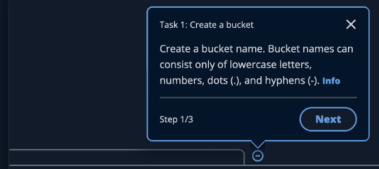
Find components

Individual view | Category view



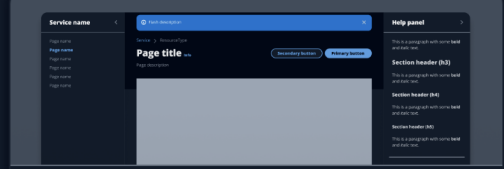
Alert

A brief message that provides information or instructs users to take a specific action.



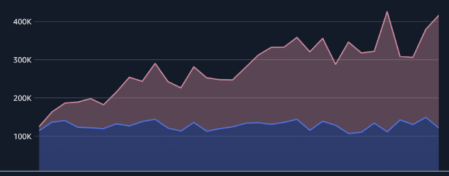
Annotation context

The annotation context is an invisible layer on top of the interface. It tracks the progress of a launched tutorial and feeds dynamic content to the Tutorial panel in Hands-on tutorials. It also renders annotation popovers and hotspot icons.



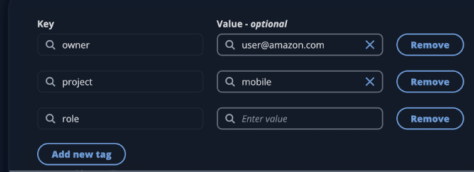
App layout

Provides the basic layout for all types of pages, including collapsible side navigation, tools panel, and split panel.



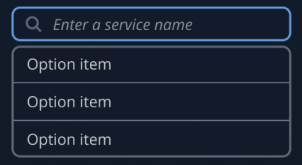
Area chart

The area chart visualizes two or more series of data. Through stacked data series, it emphasizes the part-to-whole relationship of



Attribute editor

With the attribute editor, users can create, edit, and delete resource attributes.



Autosuggest

An input that provides a list of suggestions that the user can choose from.

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Components

Overview
Alert
App layout
Attribute editor
Autosuggest
Badge
Box
Breadcrumb group
Button
Button dropdown
Calendar
Cards
Charts
Checkbox
Code editor
Collection preferences
Collection select filter
Column layout
Container
Content layout
Copy to clipboard
Date input
Date picker
Date range picker
Expandable section
File upload
Flashbar

Playground | API | Testing | Usage

Configurator

Examples

Info
Dismissible success
Non-dismissible error
Warning
With button

Configuration

Reset

Properties

Use React and JSX syntax only.

- [x] visible
- [ ] dismissible

className

dismissAriaLabel

Close alert

id

type

info

Slots

Use React and JSX syntax only.

Preview

Known issues/limitations
Review the documentation to learn about potential compatibility issues with specific database versions.

Code

Copy Code

```
import * as React from "react";
import Alert from "@cloudscape-design/components/alert";

export default () => {
  const [visible, setVisible] = React.useState(true);
  return (
    <Alert
      onDismiss={() => setVisible(false)}
      visible={visible}
      dismissAriaLabel="Close alert"
      header="Known issues/limitations"
    >
      Review the documentation to learn about potential
      compatibility issues with specific database
      versions.
    </Alert>
  );
}
```

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Design system today

Patterns

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Patterns

Overview

General

- Announcing new features
- Announcing beta and preview features
- Communicating unsaved changes
- Data visualization
- Density settings
- Empty states
- Feedback mechanisms
- Filtering patterns
- Help system
- Loading and refreshing
- Onboarding
- Selection in forms
- Service navigation
- Service dashboard
- Timestamps
- Validation

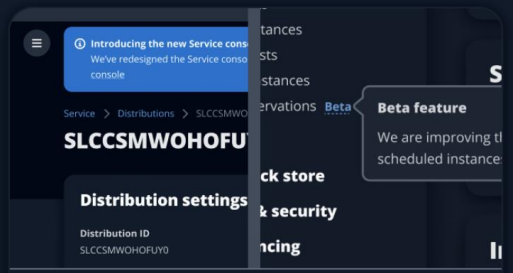
Resource management

- Create resource
- Delete patterns
- Edit resource
- View resources
- Resource details

Patterns (35)

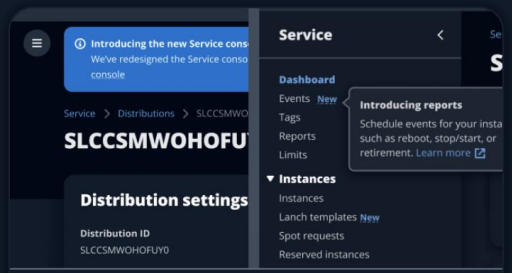
Find patterns

Individual view | Category view



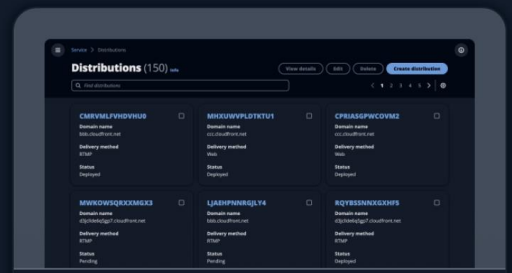
Announcing beta and preview features

Communicate to users which features are in beta or preview.



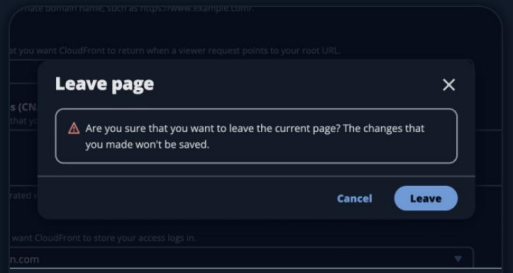
Announcing new features

Communicate new feature releases to users.



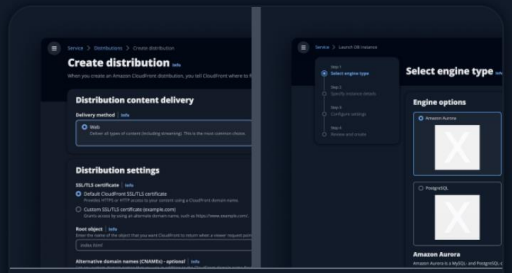
Card view

A collection of resources represented as cards. It's effective for glancing at small sets of similar resources with text, numerical, and imagery data sets.



Communicating unsaved changes

Communicate to users that unsaved changes on the page will be discarded when users leave a page.



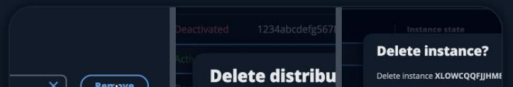
Create resource

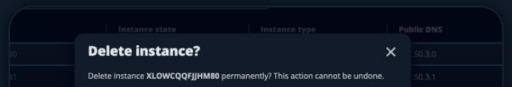
With the create new resource pattern, users can create new resources.

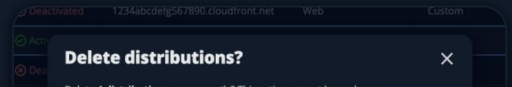


Data visualization

Data visualization is a graphic representation of information and quantitative data intended to quickly and clearly convey meaning.







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Design system today

Demos

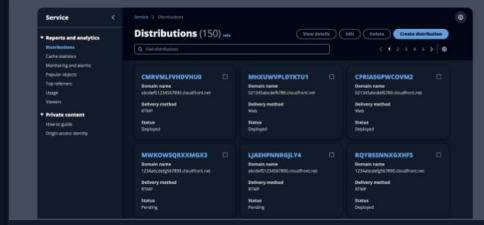
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Demos

Overview
Card view
Communicate unsaved changes
Delete with additional confirmation
Delete with simple confirmation
One-click delete
Density settings
Details page
Details page as a hub
Details page with tabs
Edit resource
Form validation
Hands-on tutorials
Manage tags
Multipage create
Read from Amazon S3
Write to Amazon S3
Single page create
Service dashboard
Split view
Split view with details comparison
Table property filter
Table property filter (server-side)
Table view
Table view (server-side)
Table view with date range picker

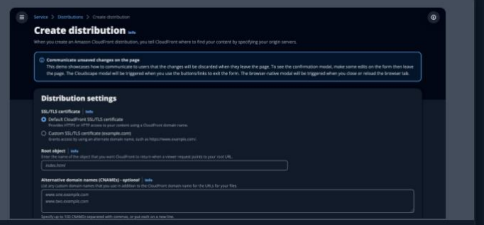
Demos (27)

Find demos



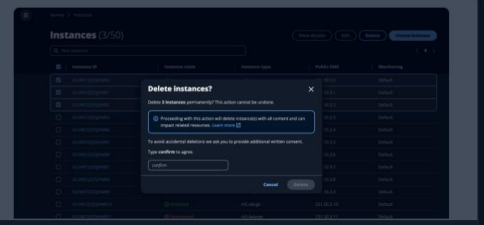
Card view

A collection of resources represented as cards. It's effective for glancing at small sets of similar resources with text, numerical, and imagery data sets.



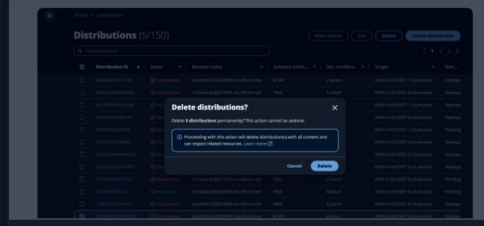
Communicate unsaved changes

An example of a form that prompts users with a confirmation modal when users leave the page with unsaved changes.



Delete with additional confirmation

The delete with additional confirmation pattern helps prevent users from performing accidental, high-severity deletions by adding friction during the deletion process.



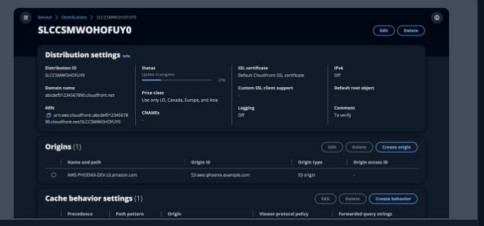
Delete with simple confirmation

Provide a layer of confirmation before deleting resources that cannot be easily recreated.



Density settings

The density settings pattern uses local storage to remember the user's preferred density setting. This pattern is for switching between comfortable and compact mode at the service level.



Details page

On a details page, users can view at a glance all the available information about a single resource.







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Service

Dashboard
Events New
Tags
Reports
Limits

Instances
Instances
Launch templates New
Spot requests
Reserved instances
Dedicated hosts
Scheduled instances Beta
Capacity reservations

Images
Elastic block store
Network & security
Load balancing
Auto scaling

Density settings

This demo is an example of Cloudscape Design System patterns and components, and may not reflect the current patterns and components of AWS services.

Service > Dashboard

Service Dashboard Info

Launch instance

Service overview

Viewing data from N. Virginia region

Running instances	Volumes	Security groups	Load balancers
14	126	116	28

Service health - *new* Info

Region
US East (N. Virginia)

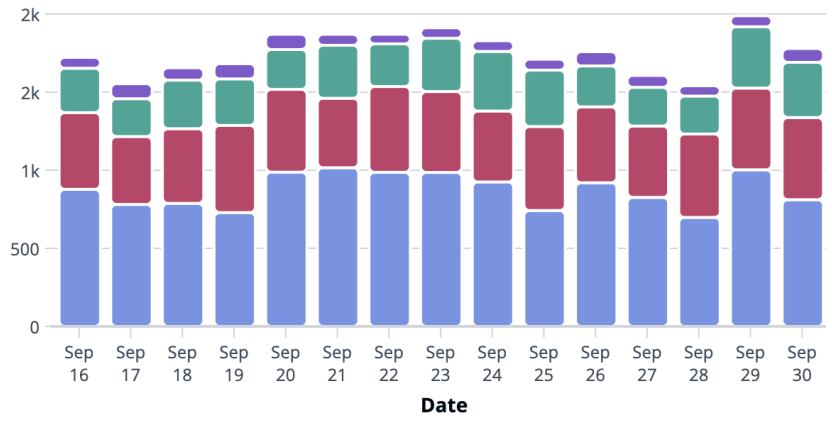
Status
Service is operating normally

Instance hours

Daily instance hours by instance type

Filter displayed instance types
Filter instance types

Total instance hours

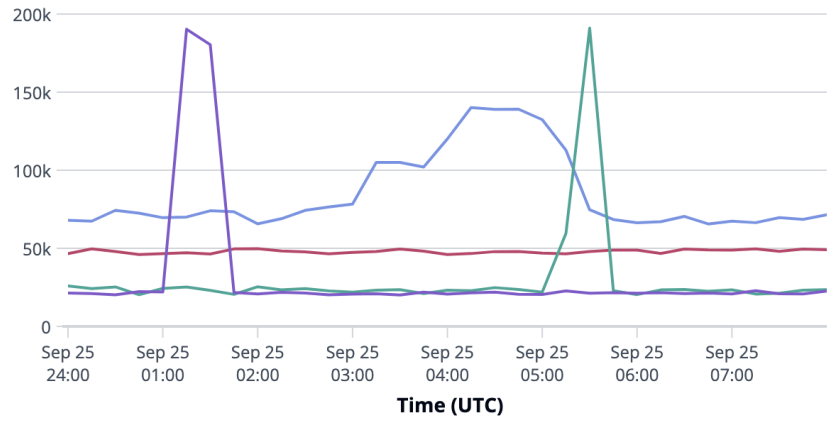


Network traffic

Incoming and outgoing network traffic

Filter displayed instances
Filter instances

Data transferred



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Core features

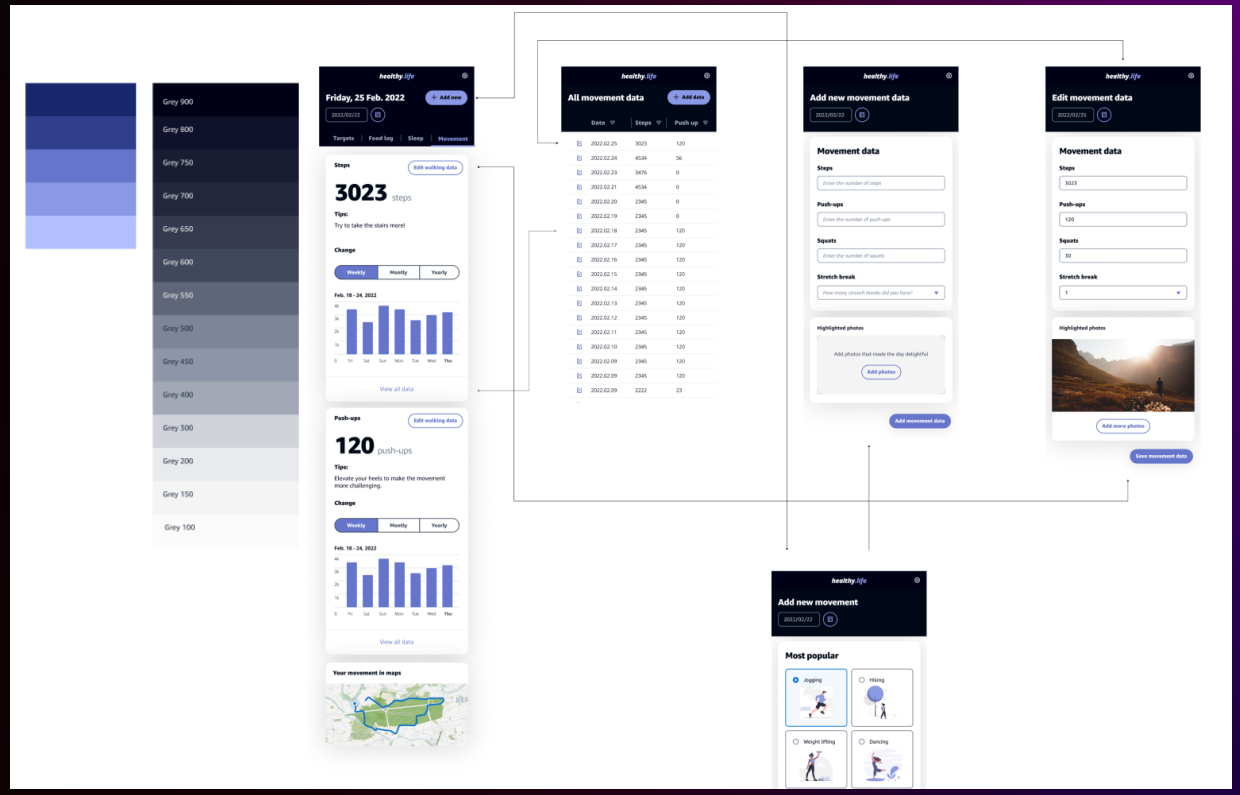
Theming
Composability
Visual modes
Density modes
Accessibility
Responsiveness

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Theming

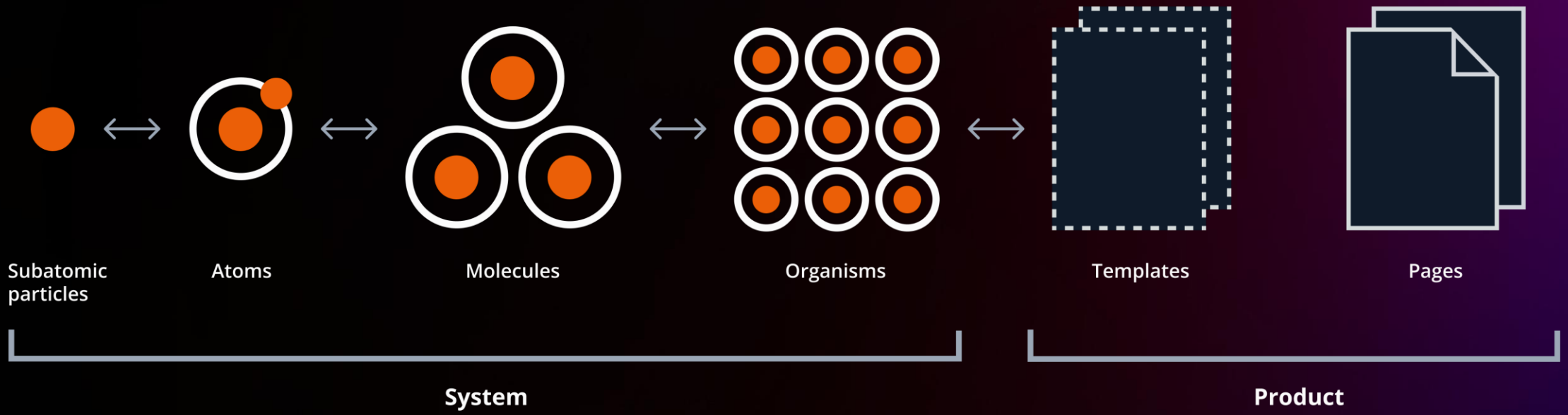
What can I change through theming?

- Changing color values of brand or common UI-related tokens
- Changing the typeface of your product
- Changing the border radius of elements, e.g., containers, form elements, alerts, and notifications
- Applying visual changes globally across a product



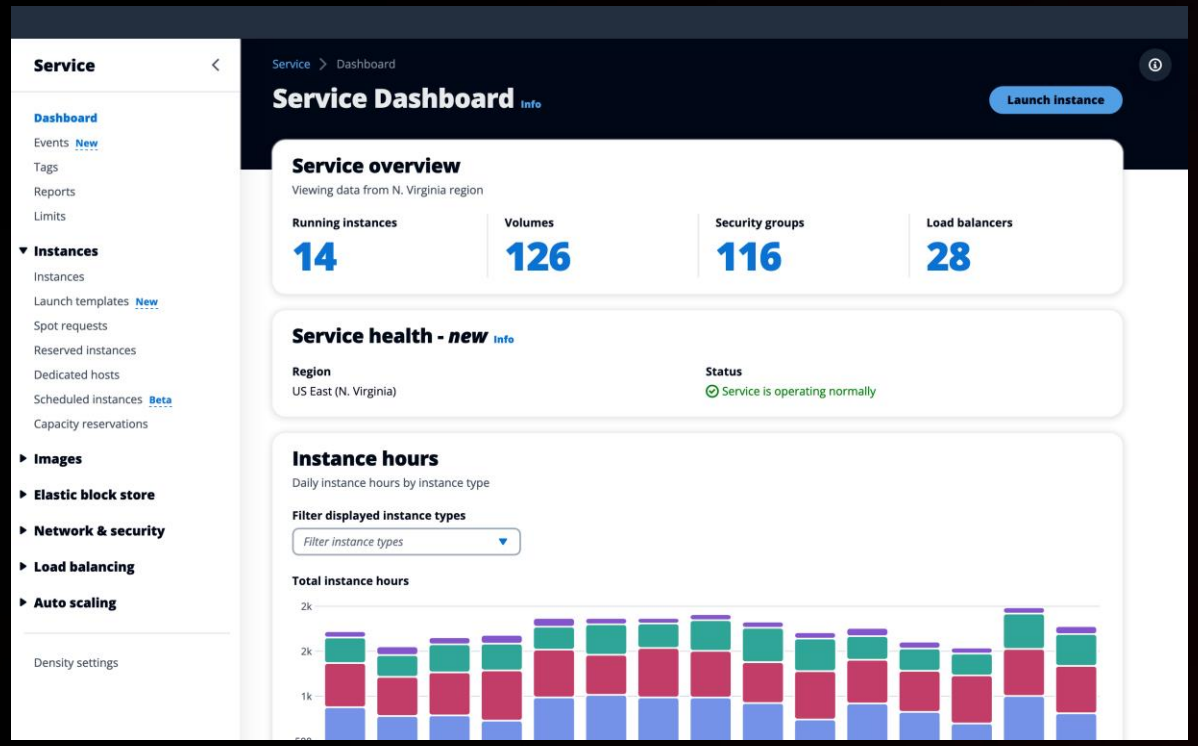
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Composability

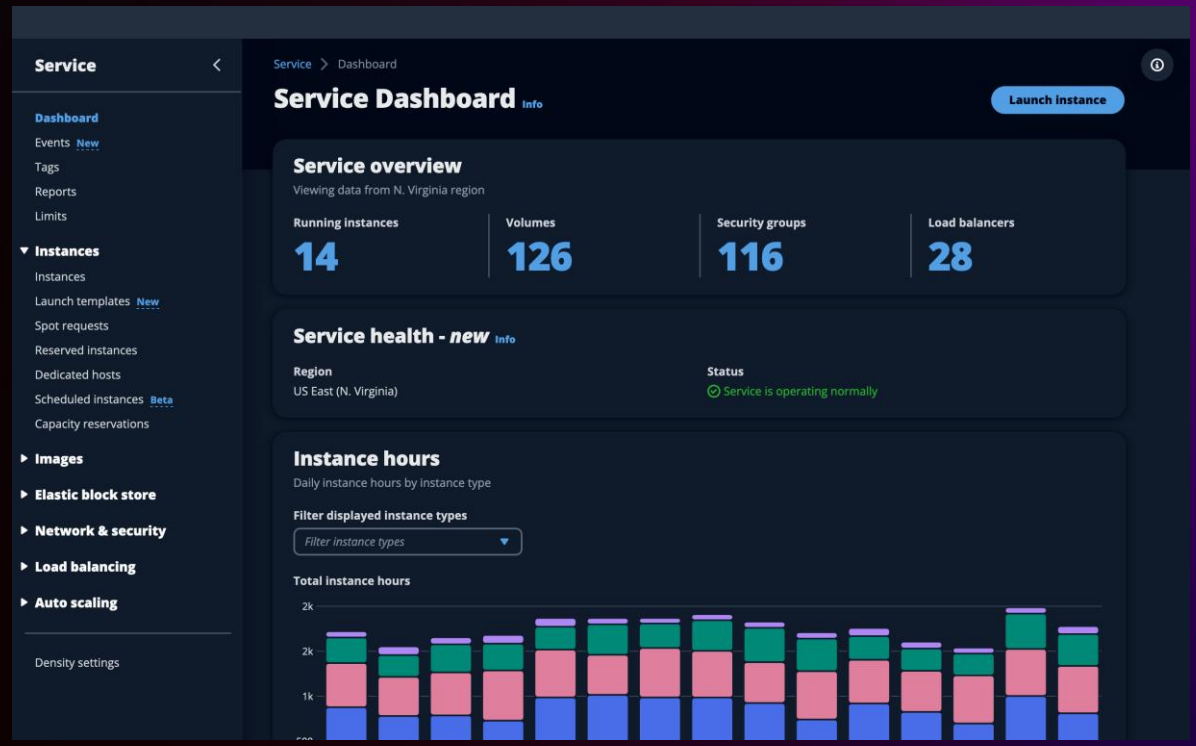


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Visual modes



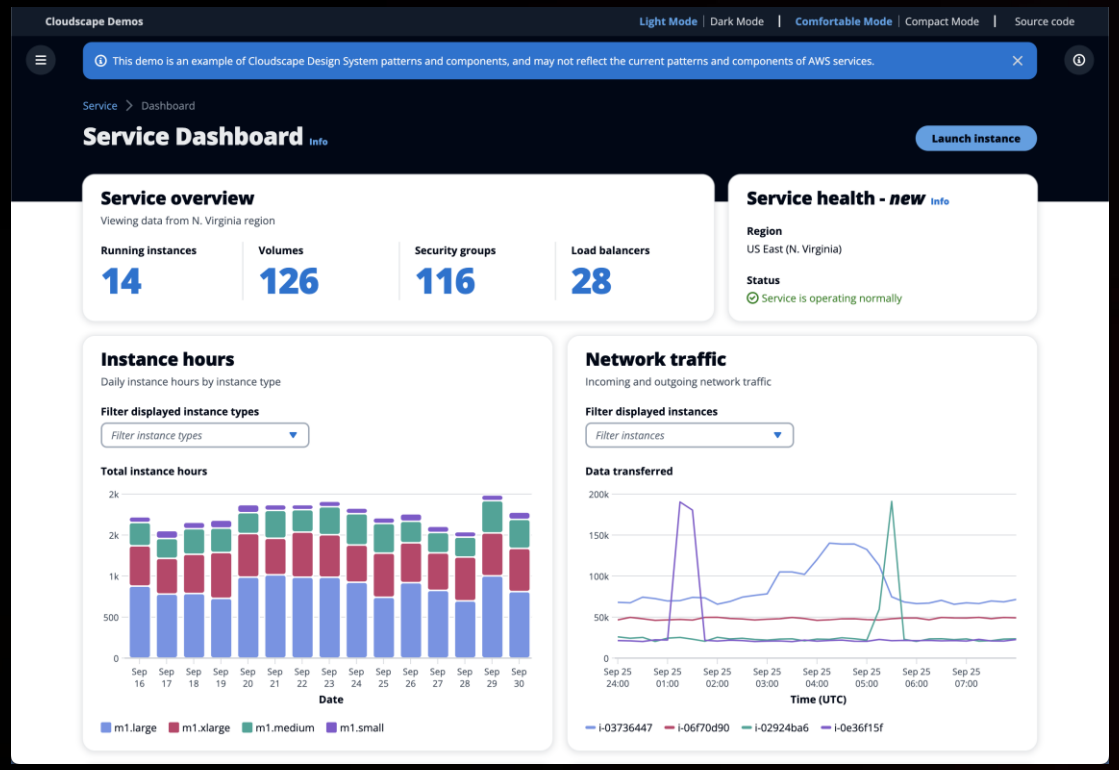
Light mode



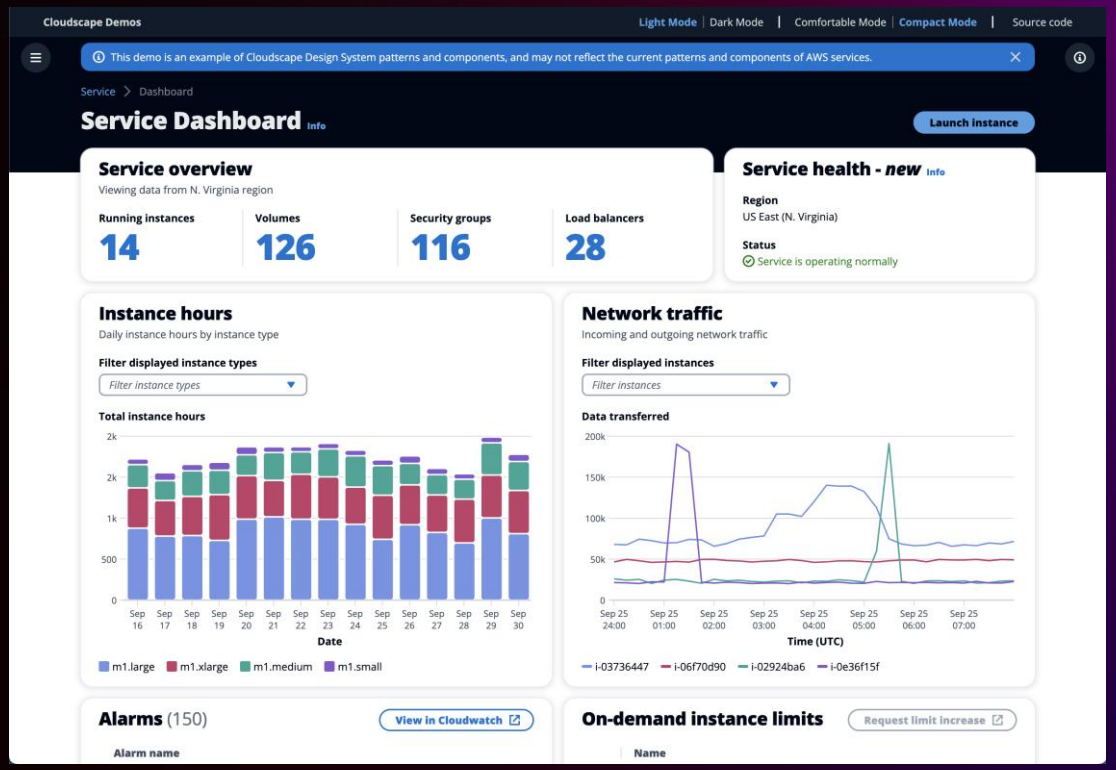
Dark mode

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Density modes



Comfortable mode



Compact mode

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Accessibility

Cloudscape Design System provides guidelines and tools to help you build accessible interfaces, such as semantic markup and use of appropriate ARIA attributes

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Responsiveness



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Result

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“Empower all creators to build great customer experiences with minimal effort.”

Our Vision

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Deliver results

Leaders focus on the key inputs for their business and deliver them with the right quality and in a timely fashion. Despite setbacks, they rise to the occasion and never settle.

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Dive deep

Leaders operate at all levels, stay connected to the details, audit frequently, and are sceptical when metrics and anecdote differ. No task is beneath them.

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Insist on the highest standards

Leaders have relentlessly high standards – many people may think these standards are unreasonably high. Leaders are continually raising the bar and drive their teams to deliver high-quality products, services, and processes. Leaders ensure that defects do not get sent down the line and that problems are fixed so they stay fixed.

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Benefits of design systems

- Improve user experience across products through well-defined and consistent interface guidelines
- Help deliver a consistent brand experience across all customer touch points
- Save time and money by speeding up the design and implementation
- Increase consistency and decrease maintenance
- Help increase accessibility and usability across products
- Facilitate communication and help drive change throughout organizations

aws

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Is Cloudscape right for me?

Whether you are:

- Building a product that extends the AWS Management Console
- Designing a user interface for a hybrid cloud management system
- Thinking of setting up an on-premises solution that uses AWS
- Building any type of data intensive interface

Cloudscape offers a solid base to make your work easier



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Cloudscape Design System

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Thank you!

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