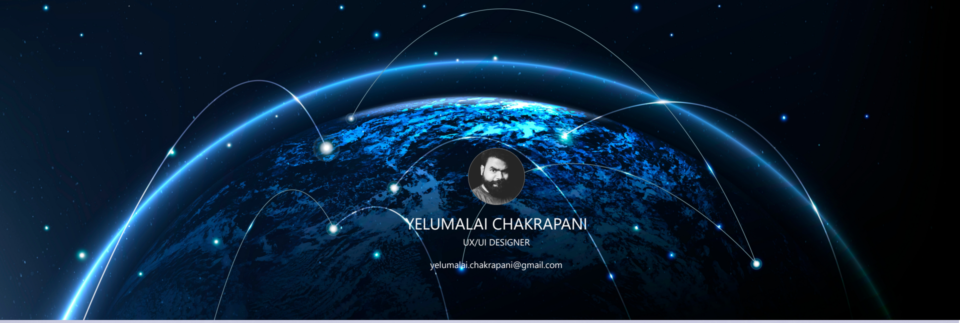
NETWORK MANAGEMENT SYSTEM

The Network Management System (NMS) application serves as a critical tool for managing complex networks, facilitating the configuration, monitoring, and maintenance of network infrastructure.

CASE STUDY



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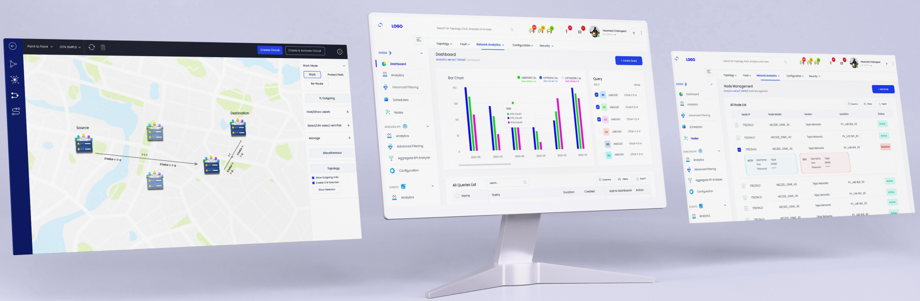


Overview

NMS Product Overview

The Network Management System (NMS) application serves as a critical tool for managing complex networks and facilitating the configuration, monitoring, and maintenance of network infrastructure. However, the existing NMS application faces several challenges that hinder its effectiveness and usability. As such, there is a pressing need to revamp the application to meet the evolving demands of modern network management and address the pain points experienced by users

The project involves designing a modern UI/UX for a Network Management System (NMS) application focused on topology creation. The aim is to update the existing system by implementing improved UI components. The application supports circuit creation, visualization of network topology, and management of network elements.

KEY FEATURES

Circuit Creation:

- → Multi-level form for circuit creation with conditional inputs.
- → Options for different circuit types and subtypes.
- → Source and destination information input.

Topology View:

- → Graphical visualization of network topology.
- → Nodes and links representation.
- → Interactivity for zooming, panning, selecting nodes and path creation.
- → Display of node and link status, including alarms.

User Flow:

- → Smooth navigation between screens for circuit creation & topology view.
- → Clear user flow for creating circuits using topology view.
- → Integration of create circuit and create circuit using topology view functionalities
- → Display of node and link status, including alarms.

UI Enhancements:

- → Implementation of a modern UI design with intuitive elements.
- → Customization options for showing/hiding labels and other features.
- → Integration of color palette for consistent visual appearance.

What I did

- > Stakeholder Interview
- > User Research
- > persona development
- > journey mapping
- > Information Architecture
- > User Flow
- > Sketches and wireframes
- > UI design

Challenges

Challenges Facing from the Customer's Perspective

- Complex circuit design, particularly function pannel, faces challenges while creating
- The user has to select all the options again from the beginning to initiate the new circuit creation process again.
- When creating a circuit, users often do not know whether it will work until the end of the process. Therefore, validation is necessary during the creation process.
- In the circuit creation process, there's a need to clearly distinguish between free and busy networks, or available and not available bandwidth as well as to display
- Creating a new circuit similar to an existing one poses significant challenges.

Solutions

Features for overcoming the challenges

- Complex circuit design, especially functional panel creation, encounter challenges.
  The solution involves redesigning the circuit creation process, breaking it down into user-friendly steps, and simplifying the design.
- In the circuit creation screen, we will display the history of the last created circuits' names. When clicking on a circuit name, it will load all previously saved selected options, allowing for easy editing.
- We will display the validation data both as text and graphically in new separate area to provide comprehensive validation feedback during the circuit creation process.
- When creating a circuit, all dropdown options or multiple select options such as free and busy networks, in the design will be indicated with color and text to show availability, ensuring that the user does not select unavailable options.
- We will implement a dropdown menu to select an already created circuit, enabling the loading of all its data into the respective fields. Additionally, the selected circuit's data will be displayed in a new separate area.

Goals

The goal of redesigning the application with technology and updated features is to enhance the user experience and improve functionality. We aim to deliver a more intuitive and efficient Network Management System (NMS) application by leveraging modern UI components. This redesign will streamline circuit creation, provide advanced topology visualization capabilities, and offer seamless integration with backend systems for enhanced data management. Ultimately, the goal is to empower users with a robust and user-friendly platform that optimizes network operations and facilitates efficient decision-making

The Process

NMS cycle is based on the UX processes mentioned below.
Aim to incorporate the key phases of Discovery, Definition, Ideation and Implementation during the project life cycle.

DISCOVER
DESIGN
EVALUATE
DELIVERY

LEARN
MEASURE
BUILD

Stakeholder Interview
Competitive Analysis
Research
Define Persona
Analytics Review

Card Sorting
Sitemap
Task Analysis
Journey Mapping/Page Flow
Sketching
Wireframes
Visual Designs

Usability Testing
Accessibility

Design Sprints
Style Guides
Mockups

Research

Primary Research

Optimizing the user experience for network administrators is the main goal of the Primary Research UX process for the Network Management System analytics server. It entails gathering information about user needs through observations and interviews, developing user-friendly interfaces for circuit creation and data analysis, and revising designs in response to user feedback. By ensuring that users can effectively control circuits, keep an eye on network performance, and make decisions, the process improves the overall effectiveness and usability of the system.

Interviews:

I chose interviews because they allow me to guide the users and gain more personal and quantitative insights.

Some interview questions:

1 Can you tell me about your role and experience with network management?
2 How often do you use the NMS in your daily work?
3 What tasks do you typically perform using the NMS?
4 How would you describe your experience with the system? Are there specific features you use frequently?
5 What challenges do you encounter when using the NMS?
6 Are there any specific tasks or features that you find difficult or frustrating?
7 How do you think the system could be improved to better meet your needs?

These inquiries aim to elicit thorough responses and provide information that can guide the Network Management System's design and advancement.

Secondary Research

Market Analysis: Review existing NMS solutions to understand features, performance benchmarks, and user feedback.

Competitive Landscape: Analyze competitor products to identify strengths, weaknesses, and market trends.

Industry Standards: Investigate industry standards and best practices for network management and circuit creation.

Technological Advancements: Examine recent technological developments in network analytics and server architecture.

User Reviews: Collect and analyze user reviews and case studies for insights into common challenges and successful features.

Regulatory Requirements: Identify any regulatory requirements affecting network management and data handling.

Vendor Reports: Study vendor reports and whitepapers for expert insights and future projections in network management systems.

Target Audience

The target audience for NMS analytics server and circuit creation includes:

1. Network Administrators: Professionals managing and maintaining network infrastructure, requiring tools for monitoring, troubleshooting, and optimizing network performance.

2. IT Managers: Individuals overseeing IT operations and ensuring that network management systems align with organizational goals and efficiency.

3. Network Engineers: Specialists involved in designing and configuring network solutions, who need robust analytics and circuit creation capabilities.

4. Data Analysts: Professionals who analyze network performance data to generate actionable insights and reports.

4. Technical Support Teams: Staff providing technical assistance and support for network-related issues, benefiting from comprehensive analytics and management tools.

5. System Architects: Experts involved in planning and designing network infrastructure, needing advanced tools for circuit creation and management.

Research Summary

The research summary focuses on optimizing Network Management Systems (NMS) by evaluating existing solutions, industry standards, and technological trends. It highlights the need for intuitive analytics and circuit creation tools, aiming to enhance network performance, support user needs, and stay competitive within the evolving landscape of network management.

Personas

Based on the data gathered during the research, I set up three personas. I referred to them throughout the entire product development process.
I concluded context Network Administrator seeking efficient, user-friendly tools for real-time network monitoring and circuit management, informed by industry standards, competitive analysis, and user feedback for improved performance.
persona to increase empathy.

Ensure that the NMS is effectively utilized and that administrative processes are streamlined.

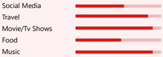
Prasad Govind

My Name is Prasad, The network management system's administrative and operational facets are supervised by the administrative manager.

Basic Info

Age:	42
Location	Bangalore
Job:	Administrative Manager
Education:	B.com

Interest



Motivation

- operational efficiency
- streamline administrative processes
- To support team

Pain Points

- Complex user management and permissions.
- Lack of integration between administrative tools.
- Time-consuming reporting requirements.

Needs

- User-friendly administrative tools.
- Comprehensive access controls.
- Integrated and automated reporting features.

Goals

- Improve administrative workflows.
- Ensure smooth operation of NMS tools.
- Optimize team productivity and performance.

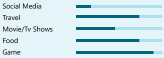
Nidhi

.My name is Nidhi and I work on the IT industry for the last 8 years. I am 32 years old and my hobbies include Dance, photography.

Basic Info

Age:	32
Location	Chennai
Job:	Support
Education:	BAC

Interest



Motivation

- Learning Art/ Craft
- Discovering new places
- Meeting my Grandparents
- Love food

Pain Points

- Network outages and disruptions.
- Slow response times from support.
- Lack of understanding of network-related issues.

Needs

- Reliable network connectivity.
- Easy-to-access support channels.
- Clear communication regarding network status

Goals

- Avoid disruptions to work.
- Maintain productivity and efficiency.

frequently uses the network for their daily tasks and relies on the NMS for circuit creation and error fixing.

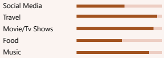
Venki Babu

.My name is Venki babu and I work on the IT industry for the last 2 decades. I am 39 years old and my hobbies include Travel, photography and singing. I describe myself a happy go getter with a very positive attitude towards life

Basic Info

Age:	45
Location	Bangalore
Job:	Manager
Education:	BMA

Interest



Motivation

- IT operations with business goals
- optimize resource allocation,
- network reliability and performance.

Pain Points

- Inadequate actionable insights from analytics.
- Difficulty aligning network
- Less performance with business Targets.

Needs

- Advanced and strategic analytics.
- Cost-effective solutions for network management.

Goals

- Enhance network efficiency.
- Achieve business objectives through effective IT management.
- Optimize overall network performance and resource use.

We are ensuring that network performance aligns with business objectives and that circuit create is effective.

Customer Journey Map

I created a customer journey map to build a better understanding of how customers find and interact with the service and to discover opportunities for improvement. The map revealed many user problems and opportunities at the consideration and loyalty stages of the customer journey. Therefore, paid special attention to these stages during the design process.

To understand how our persona interacts with the service, I created a journey map. Below is the customer journey map for my students Venki Babu and Nidhi

Steps	Initialization	Circuit Creation	Visualization	Troubleshooting
Thinking	"I need to set up and configure the NMS for our network."	"I need to create and manage circuits efficiently."	"I need to resolve detected issues quickly to avoid downtime."	"I need to identify and fix underlying problems."

Doing	Logging into the NMS, setting up initial configurations, defining network parameters.	Accessing the circuit creation interface, selecting network components, defining circuit parameters.	Identifying issues, following resolution steps, and coordinating with teams if necessary.	Running diagnostics, examining logs, testing different solutions.
Feeling	😍	🙄	😎	😘
Pain Points	-> Complex setup processes -> unclear configuration steps	-> Complex circuit configurations, -> lack of intuitive UI	-> Slow identification of issues -> lack of clear resolution steps.	-> Limited troubleshooting tools ->difficulty isolating issues.
Opportunity	-> Simplify the setup process, ->provide clear onboarding -> guided tutorials.	-> Implement user-friendly design -> offer templates and automation features ->provide real-time validation.	-> Improve alerting and notification systems ->provide step-by-step resolution	-> Enhance diagnostic tools -> offer detailed log analysis ->integrate AI-powered

User Flow Description

01

Create Circuit

- Users initiate the circuit creation process by selecting "Create Circuit" from the left panel.
- They input source and destination information, including constraints.
- Depending on the selected type (MEP or P2P), users are presented with relevant subtypes: SDH/PDH/VCG, DWDM Circuit, or OTN circuit.
- Conditional inputs are displayed based on the chosen combination.
- Users have the option to create a new customer if not present in the dropdown.

02

Route Creation

- Users configure the route by selecting nodes and respective TLs.
- Outgoing TLs from a node are shown to facilitate circuit creation.
- Users can add new nodes with TL connections by clicking on links.
- Protected links are visually distinguished, and link status (up/down) is indicated.
- Users have the option to rearrange the graph and refresh the view.

03

Create and Activate Circuit

- Confirmation message is displayed upon successful creation.

06

Topology View

- Users can switch to a topology view to visualize circuits and network elements in a graphical representation.
- This view integrates with the multi-level form and allows users to interact with the circuit creation process in a visual manner.

05

Properties and Miscellaneous

- Users can access properties of circuits, routes, and reversion options from the bottom panel.

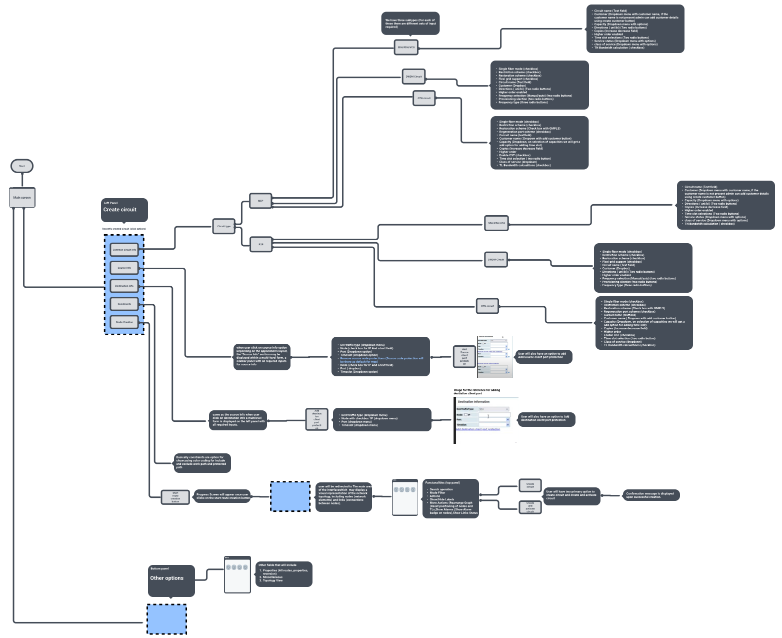
04

Mode Filter

- Users can filter circuits based on work mode, protect mode, or backup.
- Additional actions such as refresh, drag and move, delete, show/hide labels, and more are available.

information Architecture Design

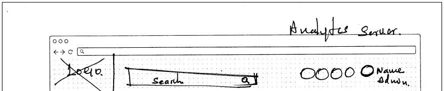
The Information Architecture, informed by primary research and user personas, supports seamless network management. It includes intuitive dashboards, simplified setup, efficient circuit creation, comprehensive analytics, incident resolution, and advanced troubleshooting tools, addressing user needs and optimizing overall performance.

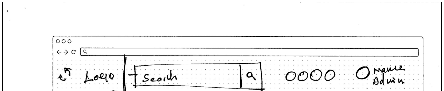

Start
Main screen
Left Panel
Create circuit
Recently created circuit (click options)
Common circuit info
Source info
Destination info
Constraints
Route Creation
Circuit type
MEP
P2P
We have three subtypes (For each of these there are different sets of input required)
SDH/PDH/VCG
DWDM Circuit
OTN circuit
• Circuit name (Text field)
• Customer (Dropdown menu with customer name, if the customer name is not present admin can add customer details using create customer button)
• Capacity (Dropdown menu with options)
• Directions (uni/bi) (Two radio buttons)
• Copies (Increase decrease field)
• Higher order enabled
• Time slot selections (Two radio buttons)
• Service status (Dropdown menu with options)
• class of service (Dropdown menu with options)
• TN Bandwidh calculation (checkbox)
• Single fiber mode (checkbox)
• Restriction scheme (checkbox)
• Restoration scheme (checkbox)
• Flexi grid support (checkbox)
• Circuit name (Text field)
• Customer (Dropbox)
• Directions (uni/bi) (Two radio buttons)
• Higher order enabled
• Frequency selection (Manual/auto) (two radio buttons)
• Provisioning slection (two radio buttons)
• Frequency type (three radio buttons)
• Single fiber mode (checkbox)
• Restriction scheme (checkbox)
• Restoration scheme (Check box with GMPLS)
• Regeneration port scheme (checkbox)
• Curcuit name (textfield)
• Customer name (Dropown with add customer button)
• Capacity (Dropdown, on selection of capacities we will get a add option for adding time slot)
• Copies (Increase decrease field)
• Higher order
• Enable CST (checkbox)
• Time slot selection (two radio button)
• Class of service (dropdown)
• TL Bandwidth calcualtions (checkboc)
when user click on source info option Depending on the application's layout, the "Source Info" section may be displayed within a multi-level form, a sidebar panel with all required inputs for source info
• Src traffic type (dropdown menu)
• Node (check box for IP And a text field)
• Port (Dropdown option)
• Timeslot (Dropdown option)
• Remove source node protections (Source code protection will be there as default for mep)
• Node (check box for IP And a text field)
• Port (dropbox)
• Timeslot (Dropdown option)
Add Source client port protection
User will also have an option to add Add Source client port protection
Image for the reference for adding destiation client port
Destination Information
DestTrafficType: SDH
Node: ☐ IP
Port:
TimeSlot:
Add destination client port protection
same as the source info when user click on destination info a multilevel form is displayed on the left panel with all required inputs.
Add destination client port protection
• Dest traffic type (dropdown menu)
• Node with checkbox 1P (dropdown menu)
• Port (dropdown menu)
• Timeslot (dropdown menu)
User will also have an option to Add destination client port protection
Basically constraints are option for showcasing color coding for include and exclude work path and protected path
Start route creation button
Progress Screen will appear once user clicks on the start route creation button
user will be redirected to The main area of the interfacewhich may display a visual representation of the network topology, including nodes (network elements) and links (connections between nodes).
Functunalities (top panel)
• Search operation
• Mode Filter
• Actions
• Show/Hide Labels
• More Actions (Rearrange Graph (Reset positioning of nodes and TLs,Show Alarms (Show Alarm badge on nodes),Show Links Status
Create circuit
Create and activate circuit
User will have two primary option to create circuit and create and activate circuit
Confirmation message is displayed upon successful creation.
Bottom panel
Other options
Other fields that will include
1. Properties (All routes, properties, reversion)
2. Miscellaneous
3. Topology View

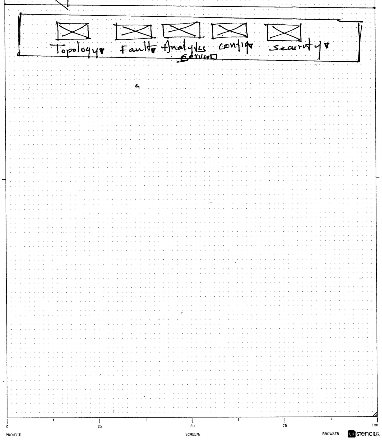
paper wireframes

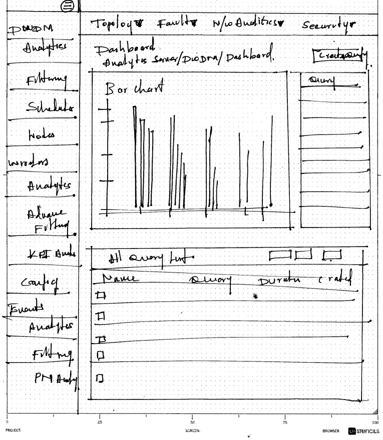
I usually start the design process with rapid paper sketches. This way I can iterate through design options quickly.

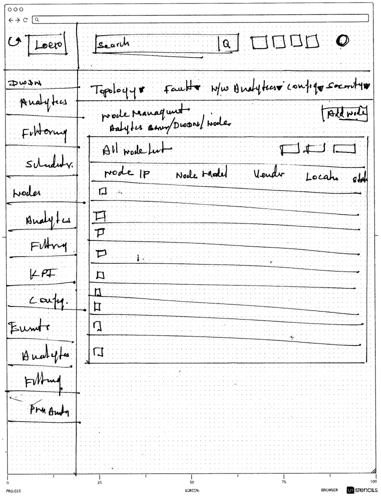
I create the low-fidelity wireframes as digital versions if my paper sketches for testing in the XD/Figma apps.

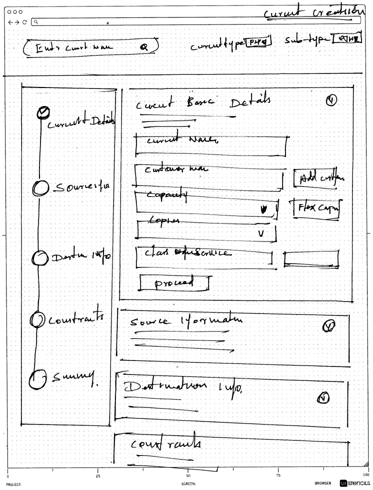

Analytics Server.
Logo
Search
OOOO O Name Admin

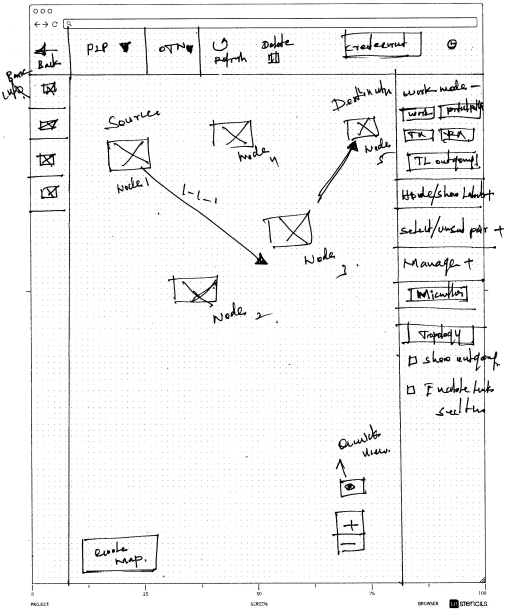

Logo
Search
OOOO
O Name Admin


Topology▾
Fault▾
Analytics
Server
config▾
security▾
PROJECT:
SCREEN:
BROWSER
uistencils


DWDM
Analytics
Filtering
Scheduler
Nodes
Wireless
Analytics
Advance Filtering
KPI Analy
Config
Events
Analytics
Filtering
PM Analy
Topology▾
Fault▾
N/w Analytics▾
Security▾
Dashboard
Analytics Server/DWDM/Dashboard
Create Query
Query
Bar chart
All Query list
Name
Query
Duration
Created
PROJECT:
SCREEN:
BROWSER
uistencils

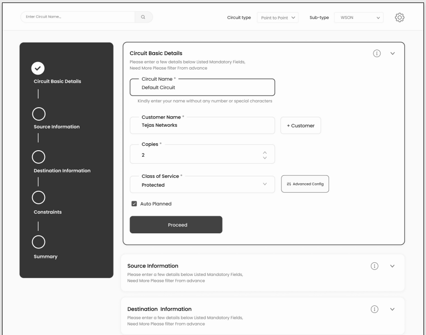

Logo
Search
DWDM
Analytics
Filtering
Scheduler
Nodes
Analytics
Filtering
KPI
Config
Events
Analytics
Filtering
PM Analy
Topology▾
Fault▾
N/w Analytics▾
config▾
Security▾
Node Management
Analytics Server/DWDM/Nodes
Add node
All node list
Node IP
Node Model
Vendor
Location
status
PROJECT:
SCREEN:
BROWSER
uistencils


Circuit creation
Enter circuit name
circuit type PHY▾
sub-type OTHER▾
Circuit Details
Source info
Destin info
Constraints
Summary
Circuit Basic Details
circuit Name
Customer name
Add customer
Capacity
Flex Capa
Capacity
Class of Service
proceed
Source Information
Destination info
Constraints
PROJECT:
SCREEN:
BROWSER
uistencils


Back
Back LWR
P2P
OTN
refresh
Delete
Create circuit
Source
Node 1
Node 4
1-1-1
Destination
Node 5
Node 3
Node 2
work mode -
work
protect path
TX
RA
TL outgoing
Hide/show Labels +
select/unselect pair +
Manage +
Micellaneous
Topology
☐ show outgoing
☐ Enable link selection
Quick view
route map.
0
25
50
75
100
PROJECT:
SCREEN:
BROWSER
UI stencils

Wireframes

Wireframe is commonly used to layout content and functionality on a page which take into account user needs and user journeys. Wireframes are used early in the development process to establish the basic of the page before visual design and content is added


Enter Circuit Name..
Circuit Basic Details
Source Information
Destination Information
Constraints
Summary
+ Customer
Advanced Config
Proceed

Circuit type: Point to Point

Sub-type: WSON

Circuit Basic Details

Please enter a few details below Listed Mandatory Fields,
Need More Please filter From advance

Circuit Name *: Default Circuit

Kindly enter your name without any number or special characters

Customer Name *: Tejas Networks

Copies *: 2

Class of Service *: Protected

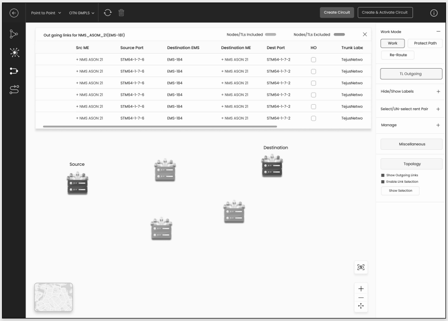
☑ Auto Planned

Source Information

Please enter a few details below Listed Mandatory Fields,
Need More Please filter From advance

Destination Information

Please enter a few details below Listed Mandatory Fields,
Need More Please filter From advance

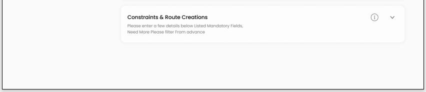

Point to Point
OTN GMPLS
Create Circuit
Create & Activate Circuit
Work Mode
Work
Protect Path
Re-Route
TL Outgoing
Hide/Show Labels +
Select/UN-select rent Pair +
Manage +
Miscellaneous
Topology
Show Outgoing Links
Enable Link Selection
Show Selection
Source
Destination

Out going links for NMS_ASOM_21(EMS-181)

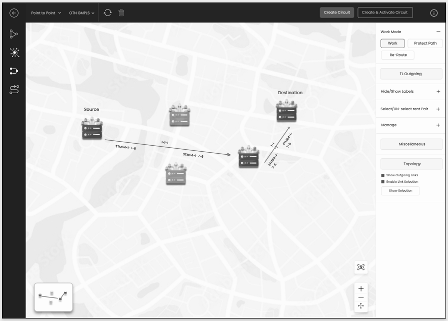
Nodes/TLs Included

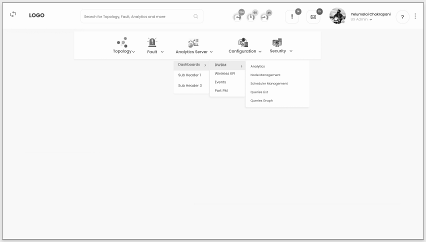
Nodes/TLs Excluded

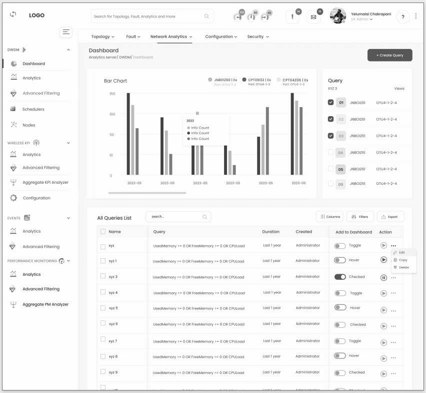
Src ME	Source Port	Destination EMS	Destination ME	Dest Port	HO	Trunk Labe
+ NMS ASON 21	STM64-1-7-6	EMS-184	+ NMS ASON 21	STM64-1-7-2	☐	TejusNetwo
+ NMS ASON 21	STM64-1-7-6	EMS-184	+ NMS ASON 21	STM64-1-7-2	☐	TejusNetwo
+ NMS ASON 21	STM64-1-7-6	EMS-184	+ NMS ASON 21	STM64-1-7-2	☐	TejusNetwo
+ NMS ASON 21	STM64-1-7-6	EMS-184	+ NMS ASON 21	STM64-1-7-2	☐	TejusNetwo
+ NMS ASON 21	STM64-1-7-6	EMS-184	+ NMS ASON 21	STM64-1-7-2	☐	TejusNetwo
+ NMS ASON 21	STM64-1-7-6	EMS-184	+ NMS ASON 21	STM64-1-7-2	☐	TejusNetwo


Constraints & Route Creations

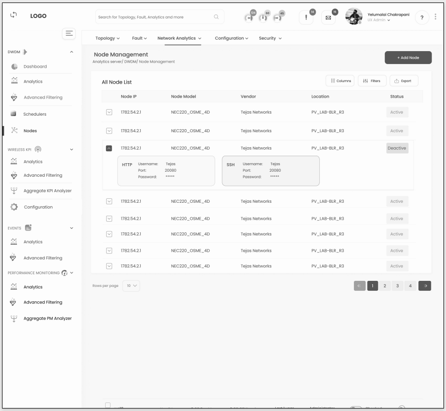
Please enter a few details below Listed Mandatory Fields, Need More Please filter From advance


Point to Point
OTN GMPLS
Create Circuit
Create & Activate Circuit
Work Mode
Work
Protect Path
Re-Route
TL Outgoing
Hide/Show Labels
Select/UN-select rent Pair
Manage
Miscellaneous
Topology
Show Outgoing Links
Enable Link Selection
Show Selection
Source
Destination
STM64-1-7-6
STM64-1-7-6


LOGO
Search for Topology, Fault, Analytics and more
Yelumalai Chakrapani
UX Admin
Topology
Fault
Analytics Server
Configuration
Security
Dashboards
Sub Header 1
Sub Header 3
DWDM
Wireless KPI
Events
Port PM
Analytics
Node Management
Scheduler Management
Queries List
Queries Graph


LOGO
Search for Topology, Fault, Analytics and more
Yelumalai Chakrapani
UX Admin
Topology
Fault
Network Analytics
Configuration
Security
DWDM
Dashboard
Analytics
Advanced Filtering
Schedulers
Nodes
WIRELESS KPI
Analytics
Advanced Filtering
Aggregate KPI Analyzer
Configuration
EVENTS
Analytics
Advanced Filtering
PERFORMANCE MONITORING
Analytics
Advanced Filtering
Aggregate PM Analyzer
Dashboard
Analytics server/ DWDM/ Dashboard
+ Create Query
Bar Chart
JNB01260 | Es
CPT01E02 | Es
CPT04Z06 | Es
150
100
50
10
0
2023-05
2023
Info Count
Query
XYZ 3
Views
All Queries List
search...
Columns
Filters
Export

☐ Name	Query	Duration	Created	Add to Dashboard	Action
☐ xyz	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Toggle	
☐ xyz 1	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Hover	
☐ xyz 3	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Checked	
☐ xyz 4	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Toggle	
☐ xyz 5	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Hover	
☐ xyz 6	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Checked	
☐ xyz 7	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Toggle	
☐ xyz 8	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Hover	
☐ xyz 9	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Checked	


LOGO
Search for Topology, Fault, Analytics and more
Yelumalai Chakrapani
UX Admin
Topology
Fault
Network Analytics
Configuration
Security
DWDM
Dashboard
Analytics
Advanced Filtering
Schedulers
Nodes
WIRELESS KPI
Analytics
Advanced Filtering
Aggregate KPI Analyzer
Configuration
EVENTS
Analytics
Advanced Filtering
PERFORMANCE MONITORING
Analytics
Advanced Filtering
Aggregate PM Analyzer
+ Add Node
Columns
Filters
Export
Rows per page
10

Node Management

Analytics server/ DWDM/ Node Management

All Node List

Node IP	Node Model	Vendor	Location	Status
1782.54.2.1	NEC220_OSME_4D	Tejas Networks	PV_LAB-BLR_R3	Active
1782.54.2.1	NEC220_OSME_4D	Tejas Networks	PV_LAB-BLR_R3	Active
1782.54.2.1	NEC220_OSME_4D	Tejas Networks	PV_LAB-BLR_R3	Deactive
1782.54.2.1	NEC220_OSME_4D	Tejas Networks	PV_LAB-BLR_R3	Active
1782.54.2.1	NEC220_OSME_4D	Tejas Networks	PV_LAB-BLR_R3	Active
1782.54.2.1	NEC220_OSME_4D	Tejas Networks	PV_LAB-BLR_R3	Active
1782.54.2.1	NEC220_OSME_4D	Tejas Networks	PV_LAB-BLR_R3	Active
1782.54.2.1	NEC220_OSME_4D	Tejas Networks	PV_LAB-BLR_R3	Active

HTTP Username: Tejas Port: 20080 Password: *****

SSH Username: Tejas Port: 20080 Password: *****

Visual Design

The visual design was developed by iterating from mood boards to the UI kit and finally to creating a first version

Once the usability issues were resolved, I moved on to design the final screens. My goal was to create a visual identity that's aligned with the brand's values and message. Also, I've checked the competition and taken a deep dive into my catalog of references for inspiration.

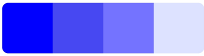
STYLE GUIDE

1

COLOR SWATCH

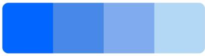
Colours

MAIN
Primary



#0000FF

MAIN
Secondary



#0066FF

BASE
Light

#809fb8 #e7edf5 #ffffff
#e7edf5 / #ffffff

BASE
Dark

#06152b

STATE
Danger

#ea3a3d
RGB (234,58,61)
100 / 80 / 60 / 40

STATE
Success

#1ad598
RGB (26,213,152)
100 / 80 / 60 / 40

STATE
Warning

#f9b959
RGB (249,185,89)
100 / 80 / 60 / 40

GRADIENT
Gradient Primary

#0000FF #C0BFEA

GRADIENT
Gradient Secondary

#0066FF #36dae9

Typography

Aa

FONT FAMILy Poppins- Semi Bold

Aa

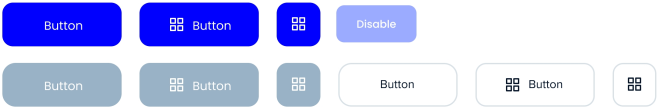
FONT FAMILY Poppins - Regulr

STYLE TITLE	FONT SIZE	LINE HEIGHT	WEIGHT	SAMPLE
Header 1 / h1	32 pt	42 pt	Bold	Almost before we knew it, **we had left the ground.**
Header 2 / h2	28 pt	40 pt	Bold	Almost before we knew it, **we had left the ground.**
Header 3 / h3	24 pt	30 pt	Bold	Almost before we knew it, **we had left the ground.**
Header 4 / h4	22 pt	30 pt	Semibold	Almost before we knew it, **we had left the ground.**
Body 1 / b1	16 pt	22 pt	Bold	Almost before we knew it, **we had left the ground.**
Body 2 / b2	14 pt	22 pt	Semibold	Almost before we knew it, **we had left the ground.**

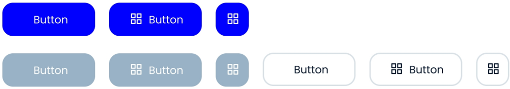
Caption	12 pt	18 pt	Semibold	Almost before we knew it, **we had left the ground.**
Input	12 pt	18 pt	Semibold	Almost before we knew it, **we had left the ground.**

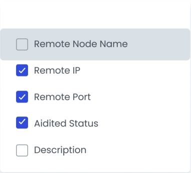
UI Components

LARGE SIZE
Buttons


Button
Button
Disable
Button
Button
Button
Button

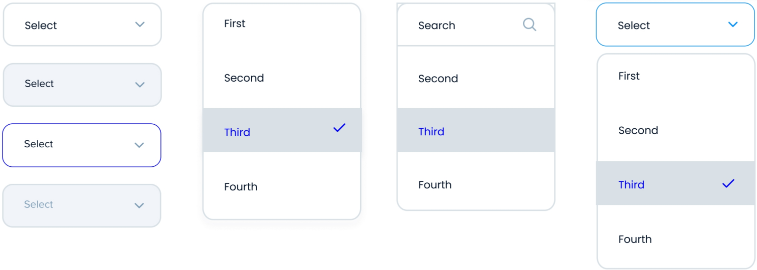
SMALL SIZE
Buttons

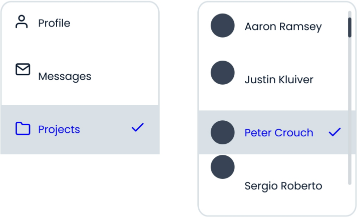

Button
Button
Button
Button
Button
Button



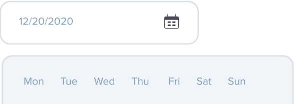
☐ Remote Node Name
☑ Remote IP
☑ Remote Port
☑ Aidited Status
☐ Description

Dropdowns & Selectors

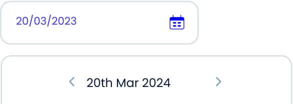

Select
Select
Select
Select
First
Second
Third
Fourth
Search
Second
Third
Fourth
Select
First
Second
Third
Fourth

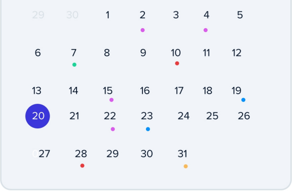

Profile
Messages
Projects
Aaron Ramsey
Justin Kluiver
Peter Crouch
Sergio Roberto

CALENDAR

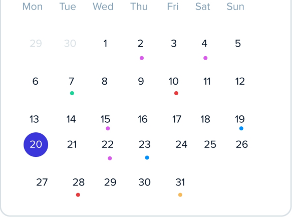

12/20/2020
Mon
Tue
Wed
Thu
Fri
Sat
Sun

CALENDAR


20/03/2023
20th Mar 2024

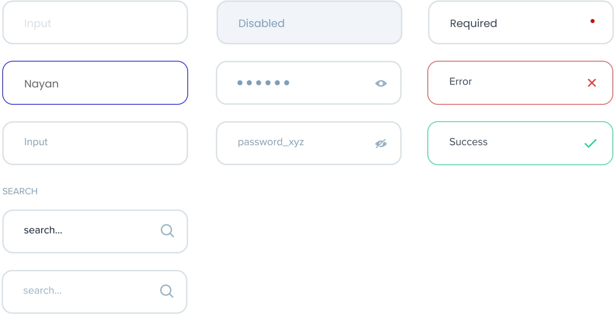


29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

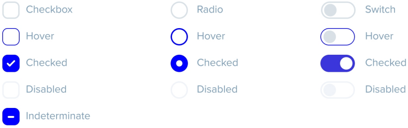


Mon	Tue	Wed	Thu	Fri	Sat	Sun
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

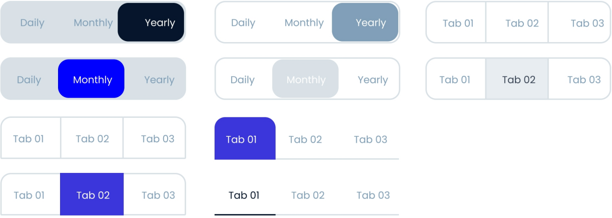
Inputs


Input
Disabled
Required
Nayan
Error
Input
password_xyz
Success
SEARCH
search...
search...

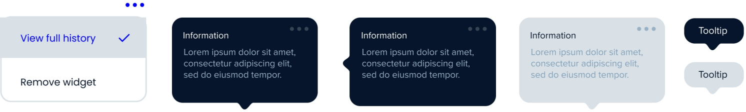
Toggles / Checkboxes / Radio


Checkbox
Hover
Checked
Disabled
Indeterminate
Radio
Hover
Checked
Disabled
Switch
Hover
Checked
Disabled

Tabs


Daily
Monthly
Yearly
Daily
Monthly
Yearly
Tab 01
Tab 02
Tab 03
Daily
Monthly
Yearly
Daily
Monthly
Yearly
Tab 01
Tab 02
Tab 03
Tab 01
Tab 02
Tab 03
Tab 01
Tab 02
Tab 03
Tab 01
Tab 02
Tab 03
Tab 01
Tab 02
Tab 03

Tooltips


View full history
Remove widget
Tooltip
Tooltip

Information

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor.

Information

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor.

Information

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor.

Alerts

Success. This is a positive notification. ✕

Error. Something went wrong. ✕

Warning. This is a warning alert. ✕

Info. This alert is for some information. ✕

Success. This is a positive notification. ✕

Error. Something went wrong. ✕

Warning. This is a warning alert. ✕

Info. This alert is for some information. ✕

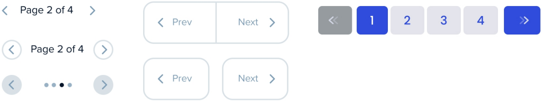
Success. This is a positive notification. ✕

Lorem ipsum dolor sit amet, consect adipiscing elit, sed do eiu tempor.

Labels

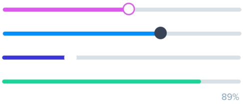
AVAILABLE NOT IN STOCK DARFT DISABLED

Pagination



Page 2 of 4
Page 2 of 4
Prev
Next
Prev
Next
1
2
3
4

Sliders

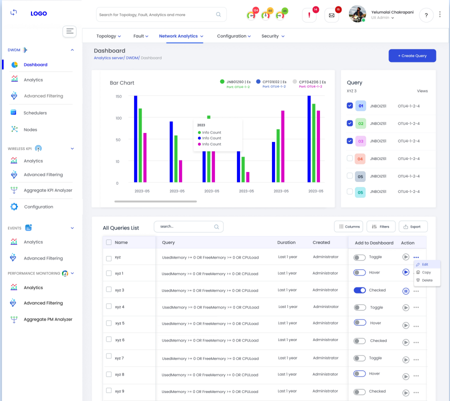


Error. This message appears on alarm. ✕

Lorem ipsum dolor sit amet, consect adipiscing elit, sed do eiu tempor.

Design

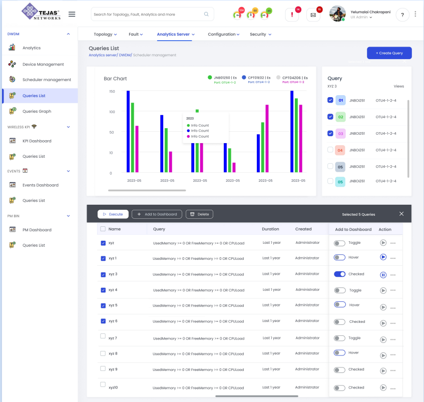
The NMS Circuit creation and analytics server design mockups feature a clean, modern UI with a refreshing look. Emphasizing simplicity, they guide users through intuitive workflows for circuit creation and analytics, enhancing usability before finalizing brand style and fonts.



LOGO
Search for Topology, Fault, Analytics and more
124
60
45
14
15
Yelumalai Chakrapani
UX Admin
?
Topology
Fault
Network Analytics
Configuration
Security
DWDM
Dashboard
Analytics
Advanced Filtering
Schedulers
Nodes
WIRELESS KPI
Analytics
Advanced Filtering
Aggregate KPI Analyzer
Configuration
EVENTS
Analytics
Advanced Filtering
PERFORMANCE MONITORING
Analytics
Advanced Filtering
Aggregate PM Analyzer
Dashboard
Analytics server/ DWDM/ Dashboard
+ Create Query
Bar Chart
JNB01Z60 | Es
Port: OTU4-1-2
CPT01E02 | Es
Port: OTU4-1-2
CPT04Z06 | Es
Port: OTU4-1-2
150
100
50
10
0
2023-05
2023-05
2023-05
2023-05
2023-05
2023-05
2023
Info Count
Info Count
Info Count
Query
XYZ 3
Views
All Queries List
search...
Columns
Filters
Export
Edit
Copy
Delete

☐	01	JNBOIZ61	OTU4-1-2-4
☑	01	JNBOIZ61	OTU4-1-2-4
☑	02	JNBOIZ61	OTU4-1-2-4
☑	03	JNBOIZ61	OTU4-1-2-4
☐	04	JNBOIZ61	OTU4-1-2-4
☐	05	JNBOIZ61	OTU4-1-2-4
☐	05	JNBOIZ61	OTU4-1-2-4

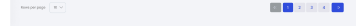
☐ Name	Query	Duration	Created	Add to Dashboard	Action
☐ xyz	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Toggle	▷ ⋯
☐ xyz 1	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Hover	▷
☐ xyz 3	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Checked	⏸ ⋯
☐ xyz 4	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Toggle	▷ ⋯
☐ xyz 5	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Hover	▷ ⋯
☐ xyz 6	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Checked	▷ ⋯
☐ xyz 7	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Toggle	▷ ⋯
☐ xyz 8	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Hover	▷ ⋯
☐ xyz 9	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Checked	▷ ⋯

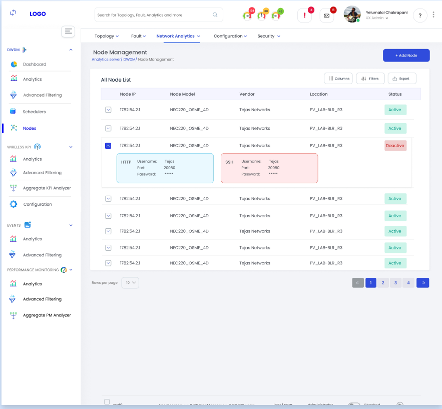


TEJAS NETWORKS
Search for Topology, Fault, Analytics and more
124
60
45
14
15
Yelumalai Chakrapani
UX Admin
?
Topology
Fault
Analytics Server
Configuration
Security
DWDM
Analytics
Device Management
Scheduler management
Queries List
Queries Graph
WIRELESS KPI
KPI Dashboard
Queries List
EVENTS
Events Dashboard
Queries List
PM BIN
PM Dashboard
Queries List
Queries List
Analytics server/ DWDM/ Scheduler management
+ Create Query
Bar Chart
JNB01Z60 | Es
Port: OTU4-1-2
CPT01E02 | Es
Port: OTU4-1-2
CPT04Z06 | Es
Port: OTU4-1-2
150
100
50
10
0
2023-05
2023-05
2023-05
2023-05
2023-05
2023-05
2023
Info Count
Info Count
Info Count
Query
XYZ 3
Views
Execute
+ Add to Dashboard
Delete
Selected 5 Queries

☐	01	JNBOIZ61	OTU4-1-2-4
☑	01	JNBOIZ61	OTU4-1-2-4
☑	02	JNBOIZ61	OTU4-1-2-4
☑	03	JNBOIZ61	OTU4-1-2-4
☐	04	JNBOIZ61	OTU4-1-2-4
☐	05	JNBOIZ61	OTU4-1-2-4
☐	05	JNBOIZ61	OTU4-1-2-4

☐ Name	Query	Duration	Created	Add to Dashboard	Action
☑ xyz	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Toggle	▷ ⋯
☑ xyz 1	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Hover	▷ ⋯
☑ xyz 3	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Checked	⏸ ⋯
☑ xyz 4	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Toggle	▷ ⋯
☑ xyz 5	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Hover	▷ ⋯
☑ xyz 6	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Checked	▷ ⋯
☐ xyz 7	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Toggle	▷ ⋯
☐ xyz 8	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Hover	▷ ⋯
☐ xyz 9	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Checked	▷ ⋯
☐ xyz10	UsedMemory >= 0 OR FreeMemory >= 0 OR CPULoad	Last 1 year	Administrator	Checked	▷ ⋯


Rows per page
10
1
2
3
4


LOGO
Search for Topology, Fault, Analytics and more
124
60
45
14
15
Yelumalai Chakrapani
UX Admin
?
DWDM
Dashboard
Analytics
Advanced Filtering
Schedulers
Nodes
WIRELESS KPI
Analytics
Advanced Filtering
Aggregate KPI Analyzer
Configuration
EVENTS
Analytics
Advanced Filtering
PERFORMANCE MONITORING
Analytics
Advanced Filtering
Aggregate PM Analyzer
Topology
Fault
Network Analytics
Configuration
Security
+ Add Node
Columns
Filters
Export
Rows per page
10
1
2
3
4

Node Management

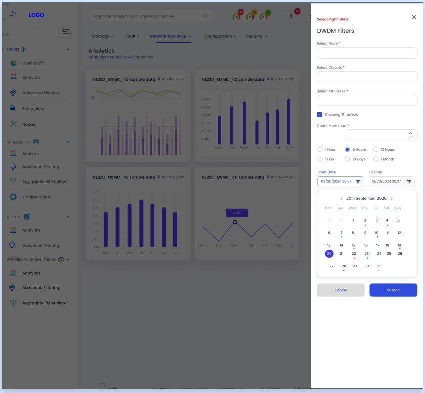
Analytics server/ DWDM/ Node Management

All Node List

	Node IP	Node Model	Vendor	Location	Status
☐	1782.54.2.1	NEC220_OSME_4D	Tejas Networks	PV_LAB-BLR_R3	Active
☐	1782.54.2.1	NEC220_OSME_4D	Tejas Networks	PV_LAB-BLR_R3	Active
☑	1782.54.2.1	NEC220_OSME_4D	Tejas Networks	PV_LAB-BLR_R3	Deactive
☐	1782.54.2.1	NEC220_OSME_4D	Tejas Networks	PV_LAB-BLR_R3	Active
☐	1782.54.2.1	NEC220_OSME_4D	Tejas Networks	PV_LAB-BLR_R3	Active
☐	1782.54.2.1	NEC220_OSME_4D	Tejas Networks	PV_LAB-BLR_R3	Active
☐	1782.54.2.1	NEC220_OSME_4D	Tejas Networks	PV_LAB-BLR_R3	Active
☐	1782.54.2.1	NEC220_OSME_4D	Tejas Networks	PV_LAB-BLR_R3	Active

HTTP
Username: Tejas
Port: 20080
Password: *****

SSH
Username: Tejas
Port: 20080
Password: *****


LOGO
Topology
Fault
Network Analytics
Configuration
Security
DWDM
Dashboard
Analytics
Advanced Filtering
Schedulers
Nodes
WIRELESS KPI
Analytics
Advanced Filtering
Aggregate KPI Analyzer
Configuration
EVENTS
Analytics
Advanced Filtering
PERFORMANCE MONITORING
Analytics
Advanced Filtering
Aggregate PM Analyzer
Analytics
Analytics server/ DWDM/ Analytics
NE220_OSMC_4D sample data
NE220_OSMC_4D sample data
NE220_OSMC_4D sample data
NE220_OSMC_4D sample data
Mon
Tue
Wed
Thu
Fri
Sat
Sun

Select Right Filters

DWDM Filters

Select Node *

Select Objects *

Select Attributes *

☑ Crossing Threshold

Count More than *

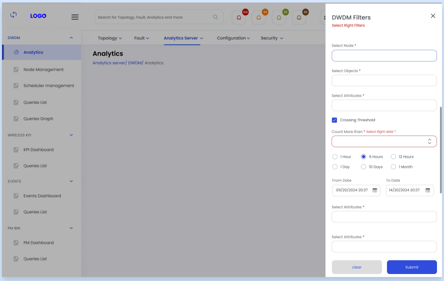
○ 1 Hour ● 6 Hours ○ 12 Hours
○ 1 Day ○ 10 Days ○ 1 Month

From Date: 09/20/2024 20:37
To Date: 14/20/2024 20:37

20th September 2020

Mon	Tue	Wed	Thu	Fri	Sat	Sun
29	30	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Cancel Submit


LOGO
Search for Topology, Fault, Analytics and more
DWDM
Analytics
Node Management
Scheduler management
Queries List
Queries Graph
WIRELESS KPI
KPI Dashboard
Queries List
EVENTS
Events Dashboard
Queries List
PM BIN
PM Dashboard
Queries List
Topology
Fault
Analytics Server
Configuration
Security
clear
Submit

Analytics

Analytics server/ DWDM/ Analytics

DWDM Filters

Select Right Filters

Select Node *

Select Objects *

Select Attributes *

☑ Crossing Threshold

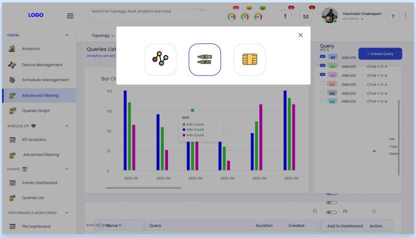
Count More than * *Select Right date* *

○ 1 Hour ● 6 Hours ○ 12 Hours
○ 1 Day ○ 10 Days ○ 1 Month

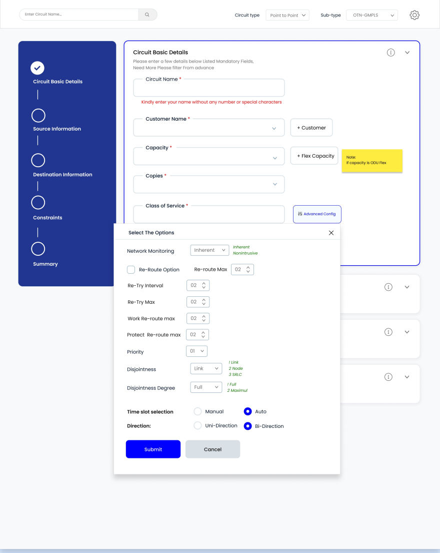
From Date: 09/20/2024 20:37
To Date: 14/20/2024 20:37

Select Attributes *

Select Attributes *


LOGO
Search for Topology, Fault, Analytics and more
Yelumalai Chakrapani
UX Admin
DWDM
Analytics
Device Management
Scheduler Management
Advanced Filtering
Queries Graph
WIRELESS KPI
KPI Analytics
Advanced Filtering
EVENTS
Events Dashboard
Queries List
PERFORMANCE MONITORING
PM Dashboard
Topology
Queries List
Analytics server/
Bar Ch
150
100
50
10
0
2023-05
2023-05
2023-05
2023-05
2023-05
2023-05
2023
Info Count
Info Count
Info Count
Query
XYZ 3
+ Create Query
Edit
Copy
Delete
Rows per page
Name
Query
Duration
Created
Add to Dashboard
Action

☑ 01	JNBOIZ61	
☑ 02	JNBOIZ61	OTU4-1-2-4
☑ 03	JNBOIZ61	OTU4-1-2-4
☐ 04	JNBOIZ61	OTU4-1-2-4
☐ 05	JNBOIZ61	OTU4-1-2-4
☐ 05	JNBOIZ61	OTU4-1-2-4


Enter Circuit Name..
Circuit Basic Details
Source Information
Destination Information
Constraints
Summary
+ Customer
+ Flex Capacity
Advanced Config

Circuit type: Point to Point
Sub-type: OTN-GMPLS

Circuit Basic Details

Please enter a few details below Listed Mandatory Fields,
Need More Please filter From advance

Circuit Name *

Kindly enter your name without any number or special characters

Customer Name *

Capacity *

Note:
If capacity is ODU Flex

Copies *

Class of Service *

Select The Options

Network Monitoring: Inherent — *Inherent* *Nonintrusive*

☐ Re-Route Option Re-route Max: 02

Re-Try Interval: 02

Re-Try Max: 02

Work Re-route max: 02

Protect Re-route max: 02

Priority: 01

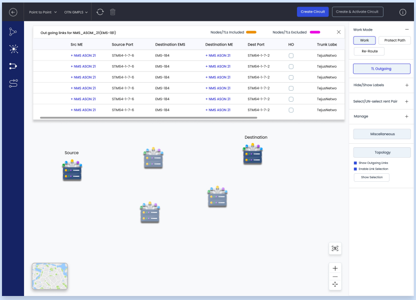
Disjointness: Link — *! Link* *2 Node* *3 SRLC*

Disjointness Degree: Full — *! Full* *2 Maximul*

Time slot selection ○ Manual ● Auto

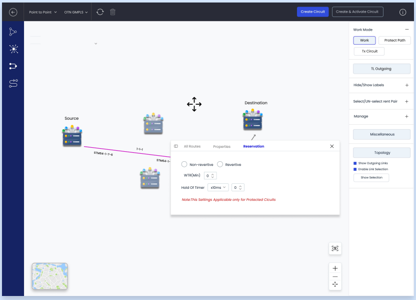
Direction: ○ Uni-Direction ● Bi-Direction

Submit Cancel


Point to Point
OTN GMPLS
Create Circuit
Create & Activate Circuit
Source
Destination
Work Mode
Work
Protect Path
Re-Route
TL Outgoing
Hide/Show Labels
Select/UN-select rent Pair
Manage
Miscellaneous
Topology
Show Outgoing Links
Enable Link Selection
Show Selection

Out going links for NMS_ASOM_21(EMS-181) Nodes/TLs Included Nodes/TLs Excluded

Src ME	Source Port	Destination EMS	Destination ME	Dest Port	HO	Trunk Labe
+ NMS ASON 21	STM64-1-7-6	EMS-184	+ NMS ASON 21	STM64-1-7-2	☐	TejusNetwo
+ NMS ASON 21	STM64-1-7-6	EMS-184	+ NMS ASON 21	STM64-1-7-2	☐	TejusNetwo
+ NMS ASON 21	STM64-1-7-6	EMS-184	+ NMS ASON 21	STM64-1-7-2	☐	TejusNetwo
+ NMS ASON 21	STM64-1-7-6	EMS-184	+ NMS ASON 21	STM64-1-7-2	☐	TejusNetwo
+ NMS ASON 21	STM64-1-7-6	EMS-184	+ NMS ASON 21	STM64-1-7-2	☐	TejusNetwo
+ NMS ASON 21	STM64-1-7-6	EMS-184	+ NMS ASON 21	STM64-1-7-2	☐	TejusNetwo


Point to Point
OTN GMPLS
Create Circuit
Create & Activate Circuit
Source
Destination
STM64-1-7-6
1-1-1
STM64-1-
Work Mode
Work
Protect Path
Tx Circuit
TL Outgoing
Hide/Show Labels
Select/UN-select rent Pair
Manage
Miscellaneous
Topology
Show Outgoing Links
Enable Link Selection
Show Selection
All Routes
Properties
Reservation

○ Non-revertive ○ Revertive

WTR(Min): 0

Hold Of Timer: x10ms 0

Note:This Settings Applicable only for Protected Cicuits

User testing and feedback

To work out the kinks for future iterations, | tested the prototype with a diverse but a rather small sample of participants. | wanted to know how likely people of different demographics were to notice the changes without me pointing them out, something to the note is that often people were most likely to be confused by the new terminology and would suggest the presence of a glossary.

| also realized that while my personas are ethnically diverse and cover a few Senior citizen users, they lack variation in age and abilities.

With all this uncovered information regarding nms I've been wondering if implementing all these ideas may be better as a nms focused on diversity, inclusion

CONCLUSION

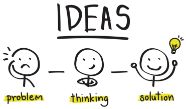
User-Centric Design: The NMS's circuit creation and analytics server UX prioritize intuitive navigation, ensuring that users can easily manage and monitor circuits.

Efficiency: Streamlined workflows and clear visual cues help users quickly complete tasks, minimizing downtime and enhancing productivity.

Data Accessibility: Robust analytics features provide actionable insights, enabling informed decision-making and system optimization.

Feedback Integration: Continuous user feedback loops allow for iterative improvements, aligning the system with evolving user needs.

Scalability: The design accommodates future growth and feature additions, ensuring long-term usability and adaptability.


IDEAS
problem
thinking
solution

YELUMALAI CHAKRAPANI
UX/UI Designer

INTERACTION IS THE BEGINNING,
LET'S BUILD SOMETHING GREAT TOGETHER

— In history all began with an interaction.

LET'S TALK

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+91 97410 01755