

MscViewer

User-Friendly GUI for Nokia MSC/MSS

The Old Way

```
MAIN LEVEL COMMAND <_>
< ZEPO:NO=1000;

LOADING PROGRAM VERSION 17.10-0

MSCi      BPAE-MSS-01          2024-11-13  14:31:46

BASE TRANSCEIVER STATION DATA

BTS  NAME :BTS1000          NUMBER :1000
BSC  NAME :ZUBZBSC01       NUMBER :1
LA   NAME :LAC3333T        LAC      :3333
MOBILE COUNTRY CODE .....(MCC)... :999
MOBILE NETWORK CODE .....(MNC)... :99
CELL IDENTITY .....(CI)... :1000
BTS ADMINISTRATIVE STATE ..... :UNLOCKED

ROUTING ZONE .....(RZ)... :999
TARIFF AREA .....(TA)... :0
DOWNLINK DTX DISABLED BY MSC .....(DTX)... :OFF
CELL DEPENDENT ROUTING .....(CDR)... :NORMAL
CELL TEST STATE .....(TE)... :NORMAL CELL
LOCAL AREA DIALLING CODE .....(LAD)... : -
CHARGING AREA CODE .....(CA)... : -
SUPPLEMENTARY CHARGING AREA CODES .....(SCA)... : -
NO NCAS SUPPORT.....(NONCAS) :FALSE
POSITION DETERMINATION TIMER.....(POST).. :0 (x 10 msec)
ESRK USAGE.....(EU)... :NO
ESRK RANGE INDEX.....(ESRK).. :0
PARAMETER SET.....(PSET).. : -
GMLC INDEX FOR EMERGENCY SERVICES.....(ESGMLC) :0

LOCATION NUMBER OF CELL .....(CLN)... :4151233331000
TYPE OF LOCATION NUMBER .....(TON)... :INTERNATIONAL
NUMBERING PLAN IDENTIFICATION .....(NPI)... :ISDN
NUMBER PRESENTATION STATUS .....(PRES).. :RESTRICTED
NUMBER SCREENING STATUS .....(SCREEN) :NETWORK PROVIDED
```

The New Way


The screenshot shows a web application interface for an MSC Viewer. On the left is a blue sidebar with navigation options: Home, MSS-01, Location Areas, Cells and BTSs (selected), Cell Lists, LTE LTE Configs, Group Call Areas, Group Call Refs, and Graph. The main content area displays details for 'BTS1000' (UNLOCKED) under the path 'MSS-01 / Cells / BTS1000'. It includes a table of parameters:

BTS NAME	BTS1000	MCC	999	BSC NAME	ZUBZBSC01
BTS NUMBER	1000	MNC	99	BSC NUMBER	1
LA NAME	LAC3333T	CI	1000		
LA LAC	3333				

Below the table are tabs for Graph, Cell Lists, GCAs, LTE Configs, and Settings. The 'Graph' tab is active, showing a relationship diagram with nodes: 'CELL LIST, 1000' (grey), 'BTS, 1000' (blue), 'LAC, 03333' (orange), and 'GCA, 30110' (yellow). Arrows indicate relationships: 'CELL LIST, 1000' contains 'BTS, 1000', 'BTS, 1000' belongs to 'LAC, 03333', and 'GCA, 30110' uses 'CELL LIST, 1000'. A legend on the right explains that clicking on a node expands children and double-clicking navigates.

Problem Statement:

Managing MSC/MSS via Command-Line Interface

- **Problem:** Complexity in managing configurations via terminal access.
 - **Challenges:** Lack of overview of configurations and their relations, time-consuming and error-prone MSC commands, constant referencing of documentation.
 - **Need:** An intuitive, graphical solution to efficiently manage MSC and MSS configurations.
- 

Our Solution: MscViewer

- **Description:** A user-friendly, web-based interface for MSC/MSS that helps users easily access, visualize and manage relevant configurations.
- **Features:** Easy search and navigation, data and relationship visualization, access control and simplified configuration management.
- **Benefits:** Saves time, minimizes errors and provides a safe, straightforward way to access MSC/MSS data.

Feature Overview

- **Key Features:**
 - Visualization of configuration hierarchy and relationships.
 - Quick browsing and detail view of configurations.
 - Export to Excel.
 - Customizable for specific customer requirements, such as GSM-R.
 - Manage multiple MSC instances through a unified interface.
- **Advantages:** Simplified MSC/MSS data access, safer operations, reduced complexity.

Product Tour: GSM-R Setup

MscViewer is configured to visualize the GSM-R relevant configurations

The screenshot displays the MscViewer application interface. On the left is a blue sidebar with navigation options: Home, MSS-01 (highlighted), Location Areas, Cells and BTSs, Cell Lists, LTE Configs, Group Call Areas, Group Call Refs, and Graph. The main content area shows 'MSS-01 Types' with a graph visualization. The graph includes nodes for LTE Config (green), BTS (blue), CELL LIST (grey), GCA (yellow), GCREF (light blue), and LAC (orange). Arrows indicate relationships: LTE Config points to BTS, GCA points to CELL LIST, GCREF points to GCA, CELL LIST points to BTS, and BTS points to LAC. A callout box on the left points to the sidebar with the text 'MSC Instances'. A callout box points to the graph nodes with the text 'Relevant configuration types'. A callout box points to the arrows with the text 'Relations between configuration types'. A callout box at the bottom left points to the sidebar with the text 'New configuration types and MSC commands can be added if needed.' The top of the interface shows 'Types Graph Update graph Created: 05.11.2024 15:13' and 'admin Logout'.

Browse Cells / BTSs

The screenshot displays the 'Cells' page in the MSC Viewer application. The interface includes a sidebar with navigation options, a main content area with a table of cells, and a terminal window at the top. Annotations highlight key features:

- Quick search:** A search bar in the sidebar.
- Sort by column:** A callout pointing to the column headers in the table.
- MSC command and execution timestamp:** A callout pointing to the terminal window showing the command 'BPAE-MSS-01> ZEPO::IDE;' and its execution time.
- Re-run the command:** A callout pointing to the 'Reload' button.
- Excel/CSV export:** A callout pointing to the 'Export' button.
- Navigate to the assigned LAC:** A callout pointing to a LAC link in the table.
- Navigate to the Cell:** A callout pointing to a BTS link in the table.

BTS	BTS NAME	BSC	BSC NAME	LAC	LA NAME	MCC	MNC	CI	State
1000	BTS1000	1	ZUBZBSC01	3333	LAC3333T	999	99	1000	UNLOCKED
1001	BTS1001	1	ZUBZBSC01	4444	LAC4444T	999	99	1001	UNLOCKED
1002	BTS1002	1	ZUBZBSC01	3333	LAC3333T	999	99	1002	UNLOCKED
1004	BTS1004	1	ZUBZBSC01	3333	LAC3333T	999	99	1004	UNLOCKED
1005	BTS1005	1	ZUBZBSC01	4444	LAC4444T	999	99	1005	UNLOCKED
1010	BTS1010	1	ZUBZBSC01	3333	LAC3333T	999	99	1010	UNLOCKED
1011	BTS1011	1	ZUBZBSC01	4444	LAC4444T	999	99	1011	UNLOCKED
1012	BTS1012	1	ZUBZBSC01	3333	LAC3333T	999	99	1012	UNLOCKED
1014	BTS1014	1	ZUBZBSC01	3333	LAC3333T	999	99	1014	UNLOCKED
1022	BTS1022	1	ZUBZBSC01	3333	LAC3333T	999	99	1022	UNLOCKED
1032	BTS1032	1	ZUBZBSC01	3333	LAC3333T	999	99	1032	UNLOCKED
2000	BTS2000	2	OLBZBSC01	4444	LAC4444T	999	99	2000	UNLOCKED
2002	BTS2002	2	OLBZBSC01	4444	LAC4444T	999	99	2002	UNLOCKED
2004	BTS2004	2	OLBZBSC01	4444	LAC4444T	999	99	2004	UNLOCKED
2010	BTS2010	2	OLBZBSC01	4444	LAC4444T	999	99	2010	UNLOCKED
2012	BTS2012	2	OLBZBSC01	4444	LAC4444T	999	99	2012	UNLOCKED

Show a Cell / BTS Data

MSC Viewer

Types Graph [Update graph](#) Created: 05.11.2024 15:13 admin [Logout](#)

MSS-01 / Cells / BTS1000

BTS1000 UNLOCKED

BPAE-MSS-01> ZEPO:NO=1000; executed on 2024-11-13 14:13:14 [Reload](#)

BTS NAME	BTS1000	MCC	999	BSC NAME	ZUBZBSC01
BTS NUMBER	1000	MNC	99	BSC NUMBER	1
LA NAME	LAC3333T	CI	1000		
LA LAC	3333				

[Graph](#) [Cell Lists](#) [GCAs](#) [LTE Configs](#) [Settings](#)

Click on node to expand childs
Double click to navigate

CELL LIST 1000

CELL 3333

MSC Viewer

Types Graph [Update graph](#) Created: 05.11.2024 15:13 admin [Logout](#)

MSS-01 / Cells / BTS1000

BTS1000 UNLOCKED

BPAE-MSS-01> ZEPO:NO=1000; executed on 2024-11-13 14:13:14 [Reload](#)

BTS NAME	BTS1000	MCC	999	BSC NAME	ZUBZBSC01
BTS NUMBER	1000	MNC	99	BSC NUMBER	1
LA NAME	LAC3333T				
LA LAC	3333				

[Graph](#) [Cell Lists](#) [GCAs](#) [LTE Configs](#) [Settings](#)

BTS NAME	BTS1000	
BTS NUMBER	1000	
BSC NAME	ZUBZBSC01	
BSC NUMBER	1	
LA NAME	LAC3333T	
LA LAC	3333	
MOBILE COUNTRY CODE	MCC	999
MOBILE NETWORK CODE	MNC	99
CELL IDENTITY	CI	1000
BTS ADMINISTRATIVE STATE		UNLOCKED
ROUTING ZONE	RZ	999
TARIFF AREA	TA	0
DOWNLINK DTX DISABLED BY MSC	DTX	OFF
CELL DEPENDENT ROUTING	CDR	NORMAL
CELL TEST STATE	TE	NORMAL CELL
LOCAL AREA DIALING CODE	LAD	-

[#https://areamanager-test.sbb.ch/msc-viewer/MSS-01/cells/1000#](https://areamanager-test.sbb.ch/msc-viewer/MSS-01/cells/1000#) auf dieser Seite in einem neuen Tab öffnen

Expandable configuration graph

MSC output

Create a LTE Configuration

Structured input form

MSC Viewer

- Home
- MSS-01
- Location Areas
- Cells and BTSs
- Cell Lists
- LTE LTE Configs**
- Group Call Areas
- Group Call Refs
- Graph

Types Graph Update graph Created: 05-11-2024 15:13

admin Logout

ed on 2024-11-05 15:13:34 Reload

MCC	MNC	CI
228	06	65102

Create LTE Configuration

CELL / BTS

BTS1000 / 1000 Choose...

E-UTRAN CELL GLOBAL IDENTITY

ECI	EMCC	EMNC
234545	228	01

Command

`ZEPE: ECGI: ECI=234545, EMCC=228, EMNC=01: TYPE=BTS, NO=1000;`

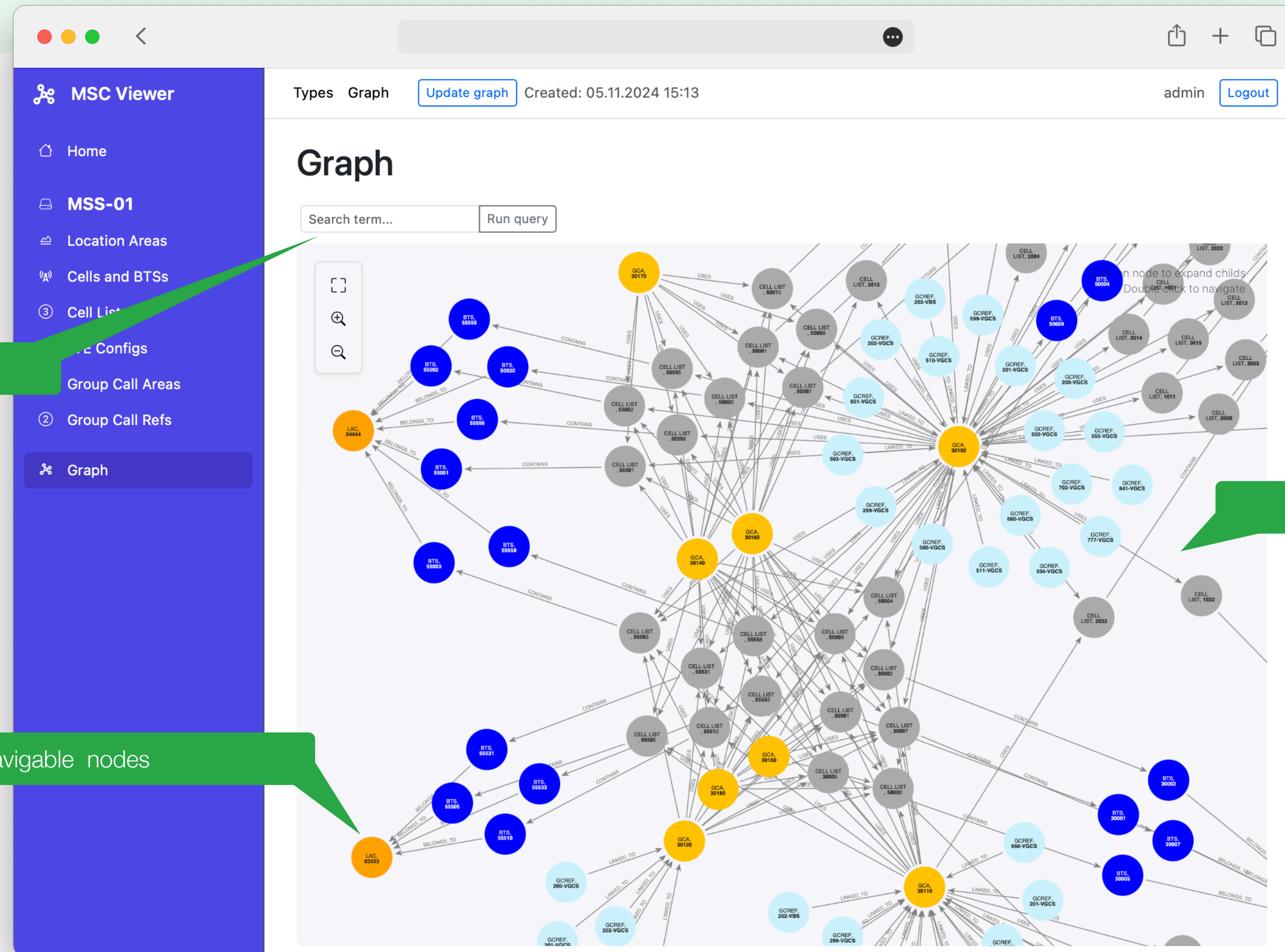
Cancel Create / Preview

Data picker

Command preview

Form validation before submit

Explore Configuration Relationships



Search by attribute


Navigable nodes

Expandable configuration graph


Steps to Launch the Solution

- Installation on-site or in an enterprise cloud environment (using Docker, Podman or similar tools)
- Configure access for MSCs, similar to access via CLI
- Define internal users or allow access through corporate Identity and Access Management (IAM)
- Configure allowed MSC commands and define relationships between them

Our Offering: All-In-One Solution

- **Software:**
 - User-friendly, web-based tool for MSC/MSS management
 - Key features: Data visualization, configuration management and access control
 - **Professional Services:**
 - Installation, customization and integration
 - Expert consulting and configuration support
 - **Support:**
 - Ongoing maintenance and updates
 - Technical assistance
- 

Company: Greenstones GmbH

- Greenstones GmbH focuses on custom enterprise applications, with strong expertise in GSM-R, location intelligence and geocoding.
 - Our team has more than 15 years of experience in the GSM-R environment and in related systems like MSC/MSS.
 - We have extensive experience in development and support for enterprise clients, including SBB AG, Helvetia Versicherungen, Allianz SE, Pitney Bowes and Kölner Verkehrs-Betriebe.
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Thank you!

Would you like a live demo or are there any questions?

Contact us:

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