

# Cluster Manager - User Documentation

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## 1. Project Overview and Cluster Manager Role

The **Backup Cluster Manager** project (AMOS) aims to develop a distributed backup management system consisting of a grid of service **nodes**. The primary motivation is to **scale up** backup processes to larger data volumes by increasing parallelism across this node grid.

Role	Description
<b>Cluster Manager</b>	Supervisor instance managing the entire node grid and provides the user interface
<b>Backup Node</b>	Worker nodes that execute backup operations (currently simulated)

Note: The Cluster Manager also functions as a Backup Node, participating in backup tasks while providing leadership and coordination.

### Key Cluster Manager Responsibilities:

- Managing the **addition or removal** of service nodes.
  - Adding and removing **SEP sesam server nodes** to and from the cluster.
  - Knowing which node is responsible for which **data**.
  - Controlling the cluster mode at the SEP sesam server nodes.
  - **Synchronizing** users, groups, ACLs, and potentially other information.
  - **Synchronizing** the server and HTTPS certificates and keys.
  - **Proxying** the communication between clients and the SEP sesam server nodes.
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## 2. Getting Started

### Accessing the System

1. Open your web browser and navigate to: <http://localhost:4200>
2. Log in with your credentials
3. You'll see the main dashboard upon successful login

### First-Time Setup

If you're an administrator setting up the system for the first time:

1. Add users and assign them to groups
2. Verify nodes are registered and healthy
3. Configure your first backup task

### Navigation

The main menu provides access to:

- **Dashboard** — System metrics and overview

- **Nodes** — Node management
- **Users** — User management
- **Backups** — Backup operations
- **Tasks** — Task monitoring
- **Clients** — Client systems
- **Permissions** — Group permissions

## 2. Managing SEP sesam Server Nodes

The Cluster Manager manages all known **SEP sesam Server Nodes** and stores this information in a database table.

Feature	Description
View All Nodes	Dashboard showing node status, health, and role
Node Registration	Nodes self-register with the Cluster Manager on startup
Heartbeat Monitoring	Automatic detection of node failures
Search & Filter	Find nodes by name, status, or other criteria

### View Nodes

1. Navigate to **Nodes** in the main menu
2. View the list of all registered nodes with their current status
3. Use the search bar to find specific nodes by name or ID
4. Click on a node to view detailed information

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## 3. Managing Users and Groups

The Cluster Manager manages and **synchronizes** user and group configurations across the enabled nodes.

Feature	Description
View Users	List all users with their status and group membership
Create User	Add new user with name, password, and group assignment
Edit User	Modify user details and group membership
Enable/Disable	Temporarily disable users without deletion
Delete User	Permanently remove user from the system
Search & Filter	Search by name/ID, filter by enabled/disabled status

### User Roles

Role	Permissions
<b>Superuser</b>	All permissions, can create/remove admins

Role	Permissions
<b>Administrator</b>	Full access except admin management
<b>Operator</b>	Read-only access to backups (no modifications)
<b>Restore User</b>	Can restore backups, no user management
<b>Backup User</b>	Can create backups, no user management

## How to Create a User

1. Navigate to **Users** in the main menu
2. Click the **Create User** button
3. Fill in the required fields:
  - Username
  - Password
  - Group assignment
4. Click **Save**

## 4. Managing Backups

Users can create backups by calling a specific endpoint. In the frontend, the configured backups can be viewed and managed.

Feature	Description
View Backups	List all backups with status, size, and timestamp
Create Backup	Initiate new (manual) backup task on selected node
Delete Backup	Remove backup from the system
Search & Filter	Filter by status (pending, running, completed, failed)
Task Monitoring	Real-time progress tracking for running backups

## 5. Client Management

Manage systems that are backed up by SEP Sesam Server Nodes.

Feature	Description
View Clients	List all clients across the cluster
Search & Filter	Find clients by name or associated node

## 6. Managing Tasks

Tasks define **scheduled backup operations** that run automatically at specified intervals. Each task is associated with a specific client and node, determining what data gets backed up and where.

### 6.1 Viewing Tasks

Feature	Description
View Tasks	List all configured tasks with schedules and status
Search & Filter	Find by name or filter by enabled/disabled status
Sort	Sort by ID, name, interval, or enabled status

Navigate to **Tasks** → view paginated list → use search/filters → click column headers to sort.

## 6.2 Creating a Task

Tasks automate backup operations by defining what should be backed up, where, and how often.

**Prerequisites:** At least one node and client configured; Administrator/Superuser permissions required.

### How to Create a Task:

1. Navigate to **Tasks** in the main menu
2. Click the **Create Task** button (visible only to users with task creation permissions)
3. Fill in the required fields in the modal:
  - **Name:** Descriptive identifier for the task
  - **Source:** Path or data source to be backed up
  - **Client Selection:** Choose which client system to back up
  - **Interval:** Select backup frequency (Daily, Weekly, or Monthly)
  - **Enabled:** Toggle to activate/deactivate the task immediately
4. Click **Save** to create the task

Tasks run automatically based on interval (Daily: 24h, Weekly: 7d, Monthly: 30d). The Cluster Manager distributes tasks across nodes. Track progress in **Backups** section.

## 7. Dashboard

The dashboard displays an **embedded Grafana dashboard** showing real-time system metrics directly in the frontend.

### Available Metrics:

- CPU and memory usage per node
- HTTP request rates and latencies
- Backup task duration and success rates
- JVM heap and garbage collection stats