



# Presentation Document

## Application for Monitoring and Management of Enterprise Storage Systems

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### 1. Introduction

The application is an advanced tool for real-time monitoring and management of enterprise storage systems. Designed to provide a clear and immediate view of the infrastructure's status, the platform enables users to:

- Monitor capacity, usage, and system performance.
  - Manage reporting and data archiving.
  - Prevent critical situations through alerts and forecasts.
  - Customize the operational experience based on individual needs.
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### 2. Application Overview

#### 2.1 Main Objectives

- **Real-Time Monitoring:**  
The platform collects and displays updated data on capacity, usage, and performance, enabling timely interventions.
- **Proactive Management:**  
Thanks to an intelligent alert system and automated reporting functions, the application identifies and resolves issues before they become critical.
- **Customization and Flexibility:**  
The interface is highly customizable, allowing filtering and selection based on various parameters (company, system type, pool, telemetry, and time intervals).

#### 2.2 Key Features

- **Capacity Monitoring:**  
Detailed information on total space, used space, free space, and snapshot management.
- **Data Visualization:**  
Interactive charts and visual indicators that display trends, distributions, and performance metrics.
- **Alert System:**  
Automatic notifications for saturation forecasts, sudden changes, inactivity, or anomalies in data transmission.

- **Reporting:**  
Generation of summary and detailed reports, available in PDF or Excel format, with automated scheduling options.
  - **User and Permission Management:**  
Advanced administration features for managing accounts and access rights.
  - **Intuitive Interface:**  
Navigation components such as the Header and Sidebar designed for ease of use.
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## 3. The Dashboard: The Operations Center

### 3.1 Real-Time Data Visualization

- **Indicators and Metrics:**
  - **Aggregated Data:**  
Displays total capacity, used and free space, average usage, transfer speed, and response times.
  - **Health Score:**  
An algorithm that calculates a “health” score for each system by integrating various parameters (space, performance, telemetry, and snapshots).
- **Interactive Charts:**
  - **Line Charts:**  
Show the evolution over time of various parameters, highlighting trends, peaks, and fluctuations.
  - **Pie Charts:**  
Display the percentage distribution of space (used vs. free) for quick understanding of the balance.
- **Card-Based Visualization:**
  - **Summary Dashboard:**  
Essential information is presented in “cards” that, with visual indicators and progress bars, provide an immediate overview of the overall status.

### 3.2 Customization and Filtering

- **Advanced Filters:**
  - **By Company:**  
Targeted view of systems for a specific company.
  - **By System Type and Pool:**  
Differentiation between models or related groups.
  - **By Telemetry Status:**  
Filtering based on the system’s ability to send real-time data.
  - **By Time Interval:**  
Analysis for the last 7, 30, 90 days, or even the last 6 months.

- **Automatic Updating:**
    - **“Live” Mode:**  
Data is updated at regular intervals to ensure current information.
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## 4. Alert and Notification System

### 4.1 Types of Alerts

- **Saturation Forecasts:**  
Notification when the system reaches critical thresholds (80%, 90%, or 100% of capacity), allowing for preventive measures.
- **Rapid Growth:**  
Alerts for sudden increases in usage to identify anomalies or unexpected behaviors.
- **Sudden Variations:**  
Notification in case of abrupt changes (increases or decreases) in usage and snapshot data.
- **Inactivity/Inactive Telemetry:**  
Alerts for systems that do not send data for prolonged periods (e.g., over 24 hours).

### 4.2 Alert Customization and Security

- **Filtering by Role and Company:**  
Alerts are displayed based on the user’s permissions; non-administrative users see notifications relevant only to their company.
  - **Dashboard Summary:**  
Immediate display of the most recent notifications with access to the full history for deeper analysis.
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## 5. Reporting Features

### 5.1 Report Creation

- **Data Selection:**
  - **Host Filters:**  
Ability to select data for one or more systems.
  - **Sections to Include:**
    - **System Statistics:**  
Number of systems, total capacity, used space, and other metrics.
    - **Trend Charts:**  
Visualization of percentage trends and capacity evolution, including snapshots.
    - **Detailed Tables:**  
A comprehensive list of systems with detailed measurements.

- **Output Format Selection:**
  - **PDF:**  
Ideal for official presentations and printing.
  - **Excel:**  
Useful for further analysis and data manipulation.

## 5.2 Report Automation and Management

- **Automated Scheduling:**  
Schedule report generation at regular intervals (daily, weekly, custom) to reduce manual workload.
  - **Report History:**  
Chronological list of generated reports, including date, time, reference system, and format, with download options for later review.
  - **Management of Scheduled Reports:**  
View and modify active schedules, with options to delete or update settings based on operational needs.
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## 6. Management of Companies and Systems

### 6.1 "Companies" Page – Company Overview

- **Company List:**  
Display of all companies with a summary including name, number of systems, number of pools, average utilization percentage, and telemetry status.
- **Filters and Search:**  
Ability to search and filter companies by status (Healthy, Warning, Critical) or system version.
- **Intuitive Navigation:**  
Clicking on a company opens a detailed page with further information.

### 6.2 "Company Detail" Page – Company Details

- **In-Depth Information:**  
Specific company data such as name, number of installed systems, number of pools, total capacity, used space, and aggregated “health” score.
- **Cards and Statistics:**  
Visual summary of the company’s status with cards highlighting system status, capacity, and overall performance.
- **Navigation to System Details:**  
Direct access to the “System Detail” page for detailed information on each system.

### 6.3 "System Detail" Page – System Details

- **Specific Information:**  
Detailed view of a single system’s data, including:

- **Identifiers:**  
Name, unique ID, and affiliated company.
    - **Storage Data:**  
Total capacity, used space, available space, and snapshot usage.
    - **Performance:**  
Transfer speed, average response time, and other performance indicators.
  - **History and Forecasts:**  
Interactive charts showing historical trends and future projections to determine when the system may reach critical thresholds.
  - **Metric Details:**  
Detailed explanation of each key metric for easier data interpretation.
  - **Easy Navigation:**  
Options to return to the “Company Detail” page or compare different systems for a comparative analysis.
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## 7. Support and Assistance

### 7.1 Support Resources

- **Technical Documentation:**  
User guides, manuals, and technical documents to deepen understanding of the application’s functions.
  - **Support Ticket:**  
Form for submitting issues and support requests including:
    - **Detail Entry:**  
Subject, problem description, priority (Low – Critical), and the option to attach files.
    - **Immediate Feedback:**  
Confirmation notification upon ticket submission.
  - **Direct Communication Channels:**  
Telephone and email support for addressing complex or urgent issues.
  - **FAQ Section:**  
Frequently asked questions providing quick solutions (e.g., password reset, alert management, data updates) to reduce waiting times.
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## 8. Settings and Profile Customization

### 8.1 Personal Profile Management

- **Editing Personal Information:**  
Update name and password with guidelines for creating secure passwords (including uppercase, lowercase, numbers, and special characters).

- **Display Preferences:**

Customize settings to display data according to individual preferences (e.g., dashboard layout, notification settings).

## 8.2 Feature Toggles

- **Enabling/Disabling Extra Features:**

Options to activate advanced features such as:

- **Cyber Threat Detection:**  
Monitor and detect potential threats.
- **Energy Consumption Analysis:**  
Analyze the energy consumption of systems.
- **Advanced Telemetry:**  
Obtain more detailed performance metrics.
- **Enhanced Notifications:**  
Receive more detailed and personalized alerts for critical events.

- **Operational Benefits:**

These features allow the platform to be tailored to specific operational needs, enhancing efficiency and security.

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## 9. Administration Panel

### 9.1 User Management

- **User List and Search:**

Comprehensive view of registered users including name, role, company, and account status.

- **Account Management:**

Features to add new users, modify existing user data (including role and company), and remove obsolete accounts.

- **Security and Credential Updates:**

Secure management of passwords and configuration of appropriate access policies.

### 9.2 Permission Management

- **Customized Access Configuration:**

Enable or disable specific functionalities based on the user's role, ensuring that only authorized profiles access sensitive tools (e.g., user management, alert history).

- **Centralized Control:**

Facilitate management of company policies and ensure compliance with internal security regulations.

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## 10. Backend and Data Management

### 10.1 Backend Features

- **Data Processing:**  
Collection, aggregation, and storage of data from the storage systems.
- **Report Management:**  
Automation in report generation and storage (both on-demand and scheduled) to ensure continuous and up-to-date documentation.
- **Data Security and Integrity:**  
Implementation of security measures to protect data from unauthorized access and ensure system reliability.

## 10.2 Benefits of Centralized Management

- **Automation:**  
Reduces manual workload, ensuring that reports and updates are available in real time.
  - **Reliability:**  
Centralized management provides complete control over access and functionalities, enhancing security and operational efficiency.
  - **Scalability:**  
The backend is designed to handle high volumes of data and users, ensuring consistent performance even in complex environments.
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# 11. Navigation Components

## 11.1 Header

- **Corporate Logo and Brand Identity:**  
Positioned at the top, reinforcing the company's visual identity.
- **Data Refresh:**  
A dedicated button for refreshing data, with an indicator showing the last update date, ensuring current information.
- **User Menu:**  
Quick access to profile settings, account management, and logout options.
  - For administrative users, additional options for user management are available.

## 11.2 Sidebar

- **Main Navigation Menu:**  
An ordered list of the application's main sections (Dashboard, Companies, Report, Analytics, Settings, Support).
  - **Access Control:**  
Menu items adjust based on the user's role, displaying only relevant functionalities.
  - **Design and Usability:**  
An intuitive layout with graphics that align with the company's identity, facilitating easy navigation.
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## 12. Login Page

### 12.1 Secure and Intuitive Access

- **Clear and Minimalist Interface:**  
A clean design with the corporate logo prominently displayed, establishing trust in the system.
- **Credential Fields:**  
Input fields for username and password accompanied by explanatory icons (user, lock).
- **Immediate Feedback and Loading Indicator:**  
Clear error messages for missing or incorrect information, with a “Signing in...” animation during authentication.

### 12.2 Authentication Process

- **Secure Credential Verification:**  
If the credentials are correct, the user is redirected to the Dashboard; otherwise, an error message prompts correction.
  - **Security and Protection:**  
Mechanisms ensure the confidentiality of credentials and prevent unauthorized access.
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### 13.1 Operational Advantages

- **Continuous and Proactive Monitoring:**  
Real-time data, interactive charts, and preventive alerts enable timely intervention in case of anomalies.
- **Informed Decisions:**  
Detailed reporting and personalized data visualization allow operators to plan strategic interventions and optimize resources.
- **Automation and Efficiency:**  
Automated report generation and centralized access management reduce manual workload, improving operational efficiency.
- **Security and Reliability:**  
A robust user and permission management system, along with a secure backend, ensures data protection and operational continuity.

### 13.2 Benefits for Administrators and End Users

- **End Users:**  
An intuitive, customizable interface that makes complex information accessible even to non-technical users.
- **Administrators:**  
Advanced tools for managing accounts, permissions, and reports, providing full control over the infrastructure and simplifying internal compliance and reporting.