

Action1



Survey Report

2023 AI Impact on Sysadmins

Table of Contents

3	Introduction
4	Executive Summary
5	Detailed Findings
5	Evolution of Sysadmin Functionality in the Age of AI
7	Sysadmins' Views on Training and the Rise of AI Competence
9	Organization Expectations and Sysadmins' Challenges in Implementing AI
11	Key Recommendations
12	Appendix. Methodology

Introduction

As artificial intelligence (AI) continues to advance at a rapid pace and permeate various industries, understanding its potential impact on the role of system administrators (sysadmins) becomes crucial. This survey report aims to explore sysadmins' perceptions, concerns, and expectations regarding the integration of AI into their job functions and its potential to contribute to organizational success.

The survey gathered insights directly from sysadmins, providing valuable perspectives on the transformative potential of AI within their roles. By analyzing the responses of 560 sysadmins worldwide, this report presents a comprehensive view of their thoughts and experiences.

This information will help IT professionals, software vendors, and organizations navigate the evolving landscape of AI and empower sysadmins to adapt and excel in the changing technological landscape.

Executive Summary

The survey findings provide valuable insights into the perceptions and concerns of IT administrators regarding the transformative potential of AI in their job roles. We found that while IT admins acknowledge the impact of AI on various aspects of their functions, they also recognize the areas where human judgment and expertise are indispensable.

IT admins agree that AI will primarily transform repeatable tasks such as log analysis, resource monitoring, vulnerability prioritization, and patch management. However, areas that require judgment, creativity, empathy, complex decision-making, and an understanding of organizational context—such as user permissions and password management, and defining system usage policies and procedures—are deemed less likely to be fully automated through AI in the upcoming two years.

The survey highlights IT admins' eagerness to enhance their AI skills to remain competitive and strategically leverage AI. A significant percentage, 63%, expressed a desire for additional training to better understand AI integration into their job functions. Furthermore, 47% of respondents expressed concern about being left behind by AI-literate professionals in their field, emphasizing the need for increased training and education to bridge this gap.

However, the most concerning finding pertains to the organizational level. Despite the widely recognized importance of leveraging AI for organizational success, a significant majority, 82%, of respondents revealed that their companies do not even require them to implement AI in their job roles. Moreover, a staggering 73% of sysadmins lack an understanding of how to strategically implement AI. This disconnect between recognition and practical implementation indicates missed opportunities for organizations and risks of falling behind in technological evolution.

In conclusion, the survey results highlight both the aspirations and challenges faced by IT admins and organizations regarding AI integration. While IT admins recognize the transformative potential of AI and express a desire to enhance their AI skills, the lack of organizational requirements and their own understanding hinder their ability to fully leverage AI for success.

Detailed Findings

Evolution of Sysadmin Functionality in the Age of AI

There is no doubt that AI is poised to bring significant changes to sysadmins' daily tasks. In this section of the survey, we have listed the key areas of sysadmin functions and asked respondents to rate the likelihood of AI replacing each area in the upcoming two years.

The survey results reveal the top five areas of sysadmin responsibility that respondents believe are most susceptible to AI replacement:

- Log analysis
- Server CPU and memory monitoring
- Vulnerability prioritization
- Streamlining patch management

AI has the ability to analyze system logs, performance metrics, and network traffic patterns, enabling the identification of anomalies and the generation of alerts. Through machine learning algorithms, AI can continually enhance its accuracy over time by learning from historical data. Consequently, this would alleviate the manual effort required for monitoring, empowering administrators to concentrate on higher-level and critical tasks. Moreover, AI can swiftly process vast amounts of data, detecting patterns or anomalies that might evade human observation. Ultimately, this could significantly enhance the efficiency and precision of log analysis. AI can maintain continuous monitoring of these metrics and execute predefined actions when specific thresholds are surpassed, such as issuing alerts or even initiating auto-scaling.

Regarding vulnerability prioritization and remediation, AI can prioritize vulnerabilities based on their potential impact and exploitability by analyzing threat intelligence data.

In terms of a key task like patch management, AI can prioritize security updates based on risk analysis, facilitating efficient distribution and deployment. By considering factors such as vulnerability severity and system criticality, AI can enhance patch management processes and bolster system security. The patching plan will undoubtedly be optimized. However, the patch management process itself can still be challenging for production servers, as it requires finding maintenance windows and obtaining approval from system owners.

All in all, AI is a powerful tool that will undeniably shape our future and impact the job of system administrators.

Chart 1.

Which areas of your functionality are most likely to be fully automated through AI in the forthcoming 2 YRs? Please rate on a scale of 1 to 5, where 1 represents ,Extremely Likely' and 5 represents ,Extremely Unlikely.'

	Extremely Likely	Likely	Neutral	Unlikely	Extremely Unlikely	N/A	Weighted Average
Log analysis	44%	40%	9%	4%	1%	0%	1.77
Monitoring of server CPU and memory utilization	42%	31%	16%	7%	2%	1%	1.91
Vulnerability prioritization	25%	45%	19%	8%	2%	1%	2.13
Patch management processes optimization to improve prioritization, scheduling, and deployment of security updates	26%	45%	18%	6%	4%	0%	2.18
Analyzing organization's security controls and comparing to compliance requirements	25%	43%	16%	10%	4%	1%	2.21
Detecting & remediating incidents	20%	35%	35%	6%	4%	0%	2.40
Installing & maintaining software	26%	33%	16%	16%	9%	0%	2.49
Troubleshooting	21%	31%	25%	16%	6%	1%	2.52
Managing files	30%	20%	20%	19%	11%	1%	2.57
Performing post-incident reviews	19%	36%	19%	17%	8%	1%	2.57
Providing end-users with first-level IT support	26%	23%	22%	13%	15%	0%	2.67
Providing IT staff with guidance and training	18%	29%	29%	14%	10%	0%	2.68
Managing SSO & passwords	23%	20%	20%	21%	14%	2%	2.77
Administering user permissions & administration	17%	24%	23%	22%	14%	1%	2.89
Defining system usage policies & procedures	14%	25%	25%	17%	17%	1%	2.94

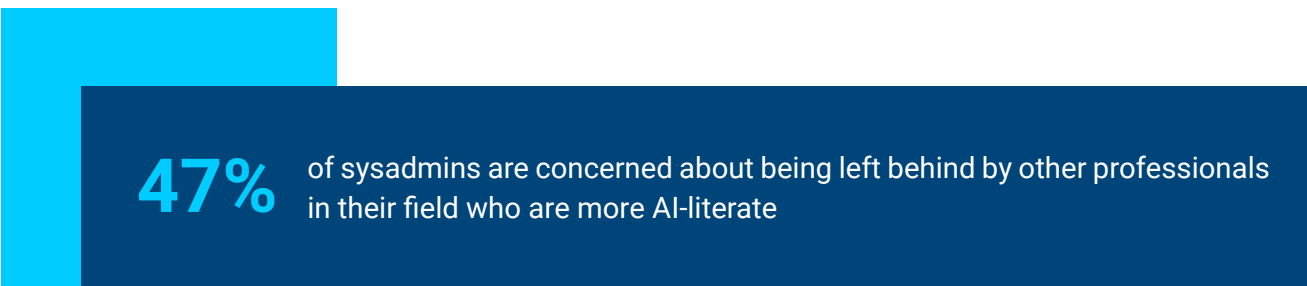
However, certain areas of system administration are least likely to be replaced by AI due to their complexity, novelty, or reliance on human judgment. These areas were also rated at the bottom of the list by respondents. They include:

- **Managing user rights, passwords, and administration of user permissions:** Determining user roles and access privileges requires human judgment, as it entails considering various factors, understanding organizational dynamics, and evaluating potential risks. The same applies to single sign-on (SSO) and password management. These tasks are better suited for human involvement rather than AI.
- **Defining system usage policies and procedures:** Policy development involves comprehending legal and regulatory requirements, aligning with organizational goals, and addressing potential ethical concerns. Making these complex decisions requires human input. However, AI can greatly assist in creating policy and procedure templates that can be customized to meet compliance standards and align with the organization's specific IT environment.

Sysadmins' Views on Training and the Rise of AI Competence

The survey results provide valuable insights into the perceptions and attitudes of sysadmins regarding the integration of AI into their job roles.

63% of the respondents indicated that they are looking to take additional training to enhance their understanding of AI integration into their job functions. This response highlights the proactive approach taken by sysadmins and their willingness to acquire the necessary skills and knowledge to effectively leverage AI technologies, keeping up with the evolving landscape of their profession.



47% of sysadmins are concerned about being left behind by other professionals in their field who are more AI-literate

Nearly half of the respondents, 47%, expressed concerns about being left behind other professionals who are more AI-literate. This finding reflects the understanding of sysadmins that having proficiency in AI-related skills and knowledge is becoming increasingly important to remain competitive and relevant in their field.

Chart 2.

Are you looking to take additional training to better understand how to integrate AI into your job?

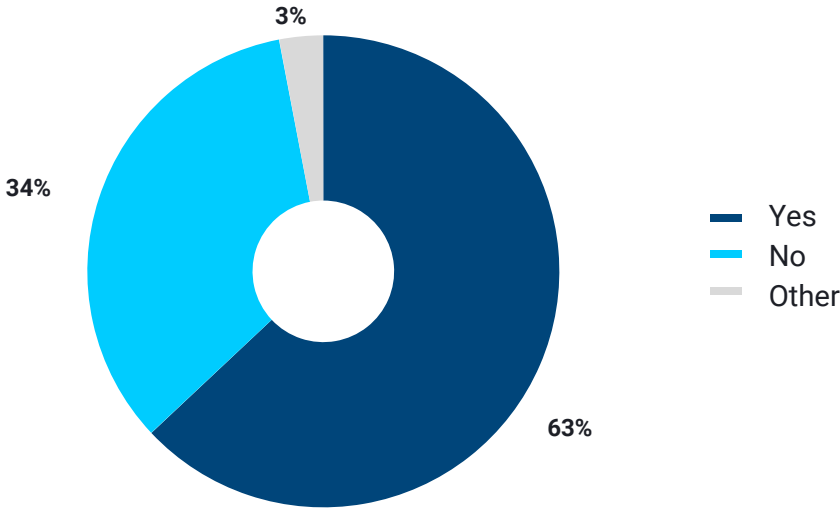
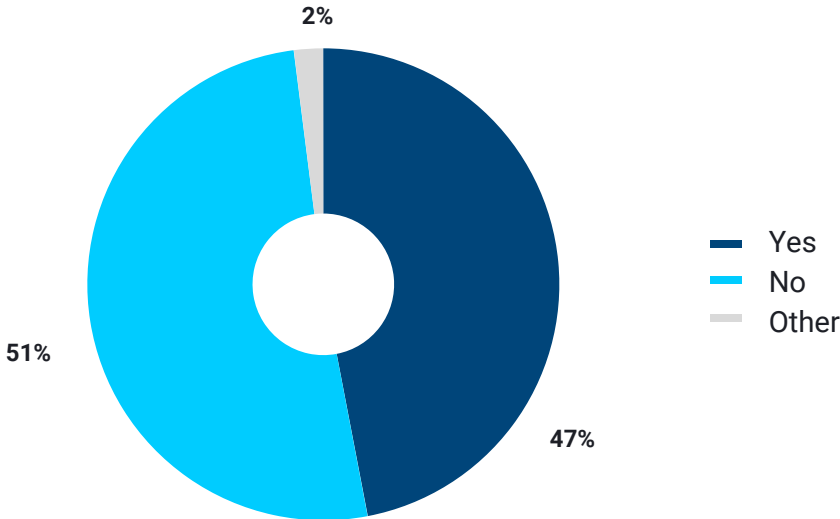


Chart 3.

Are you concerned that you might be left behind other professionals in your field who are more AI-literate?



Organization Expectations and Sysadmins' Challenges in Implementing AI

The survey results shed light on the current state of AI implementation and understanding within companies as reported by sysadmins.

The majority of 82% of the respondents indicated that their companies do not even require them to start implementing AI into their job roles. This finding highlights a significant gap between the recognized importance of AI by the general public and the actual implementation within organizations. Despite the growing recognition of AI as critical to success in various industries, the majority of companies represented in the survey do not yet prioritize AI integration in practice. This disconnect raises concerns about the pace of adoption and the missed opportunities for leveraging AI technologies.



Gartner

79%

of corporate strategists see AI as critical to their success over the next two years

73%

of sysadmins have no idea how to leverage AI capabilities for their company's success

Overall, 73% of the respondents do not even understand how to implement AI to improve current processes within their organization and keep their company's IT on the cutting edge of industry trends. This finding highlights a significant knowledge gap among sysadmins when it comes to effectively incorporating AI into their job functions.

In summary, the survey results present worrying insights. While it is widely discussed, and it seems that everyone recognizes the criticality of AI for success, the survey reveals a significant disparity between strategic priorities and actual implementation within organizations. The low percentage of companies requiring AI implementation and lack of understanding of how to integrate AI among sysadmins highlight the challenges faced in translating AI discussions into actionable steps. This disconnect between recognition and implementation underscores the need for greater organizational support, training, and clarity on how AI can be effectively integrated into sysadmin roles.

Chart 4.

Does your company require you to start implementing AI into your job?

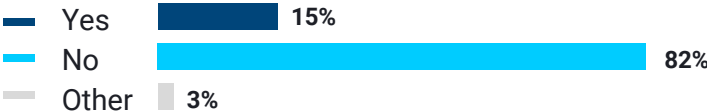
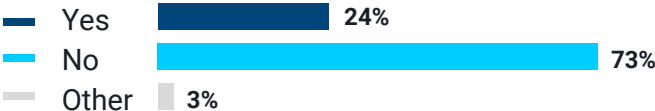


Chart 5.

Do you have an explicit understanding of how to integrate AI into your job to improve the current processes and ensure that your company's IT stays on the cutting edge of the industry trends?



Key Recommendations

The survey yielded valuable insights regarding the potential implications of AI on the job functions of system administrators, as well as the challenges and opportunities it presents for organizational development and breakthrough. Based on these findings, the following key recommendations are provided to assist organizations and sysadmins in developing a strategy and focus on leveraging AI for their success:

- **Take a Balanced and Thorough Approach to AI:** Indeed, it is essential to explore the potential of AI rather than ignoring it; in fact, automating certain tasks through AI could result in job losses or changes in job requirements. Understanding the strengths and weaknesses of AI compared to human capabilities is crucial for fully utilizing its power and tailoring it to the organization's needs. The benefits of AI include increased efficiency through automation, improved accuracy in data analysis, enhanced scalability for growing infrastructures, and continuous learning through machine learning algorithms. However, it is important to consider the drawbacks and limitations of AI, such as the costs of implementation, dependence on data quality, limitations in understanding context or making intuitive decisions, and the inability to replicate human interpersonal skills like communication and empathy. A balanced approach that combines AI automation with human oversight is necessary to harness the benefits of AI in systems administration and maintain a flexible and adaptable IT ecosystem.
- **Invest in AI Training and Education:** Organizations should provide comprehensive AI training programs to empower sysadmins to effectively leverage AI. These programs should cover both the technical aspects of AI integration and the strategic understanding of how AI enhances processes and drives organizational success. It is also important to gain senior support for considering the potential implementation of AI and encourage a culture of innovation and cooperation. Senior leadership should outline the goals of AI implementation and cooperate with sysadmins in developing AI integration strategies.
- **Close the Gap between Recognition and Implementation:** It is necessary to address the gap between recognizing the importance of AI and its practical implementation. Define strategic priorities, align them with action and establish mechanisms to overcome implementation barriers. By fostering an environment that embraces AI's potential, organizations can capitalize on AI's transformative power while empowering IT admins to navigate the evolving landscape with confidence and skill.

By following these key recommendations, organizations can effectively leverage AI to enhance sysadmin roles, drive innovation, and achieve organizational success in the evolving technological landscape.

Appendix. Methodology

To compile this report, we polled 560 sysadmins worldwide from Action1's customer base. Respondents were invited to participate in a giveaway for a chance to win a small monetary reward. The responses were collected in June 2023.

About Action1 Research

The report is brought to you by Action1 Research, which conducts industry surveys among IT pros worldwide to discover trends in cybersecurity and IT. For more information, please visit:

www.action1.com/resources/research/

About Action1 Corporation

Action1 is the #1 risk-based patch management platform for distributed networks trusted by thousands of global enterprises. Action1 helps to discover, prioritize, and remediate vulnerabilities in a single solution to prevent security breaches and ransomware attacks. It automates patching of third-party software and operating systems, ensuring continuous patch compliance and remediation of security vulnerabilities.

The company was founded by cybersecurity veterans Alex Vovk and Mike Walters, who previously founded Netwrix, which was acquired by TA Associates.

Learn more at: www.action1.com.