IST 615 – Cloud Management

School of Information Studies, Syracuse University
Fall 2024

HW - 2

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Lab Due: 10/01/2024

Assignment Submitted: 9/30/2024

(The document has **4 pages** with the cover page)

Part 1 (35 Points)

1. Which company/customer does the story refer to, and what is the economic sector where the company offers its products/services?
The story refers to **Providence**, a prominent healthcare system that operates in the **healthcare sector**. It provides medical services through 51 hospitals and over 1,085 clinics. Providence used Microsoft Azure AI services, specifically the Azure Health Bot, to improve patient care and manage hospital resources during the COVID-19 pandemic.

2. What were the main drivers for the company/customer to use cloud services?

- **Scalability:** Providence needed a solution that could quickly scale to manage the increasing number of inquiries and patients during the pandemic.
- **Freeing up medical resources:** The Azure Health Bot enabled Providence to triage patients, answer COVID-19-related questions, and prioritize those requiring immediate medical attention, reducing pressure on healthcare providers.
- **Managing the surge in patients:** Providence had to handle a significant increase in patient inquiries and visits, particularly as its region became the epicenter of the first major U.S. outbreak.

3. What was made more efficient for the customer thanks to the use of cloud services?

- **Access to Accurate and Up-to-Date Information:** By integrating CDC guidelines and Providence's clinical recommendations into the bot, patients received accurate and reliable information in real-time, helping reduce misinformation and anxiety.
- **Call Center Workload Reduction:** Automating the handling of common COVID-19-related inquiries and FAQs significantly reduced incoming calls to Providence's call centers, alleviating long wait times (which had reached up to five hours) and allowing healthcare staff to focus on more urgent cases.

4. What other benefits were obtained from the use of cloud services?

- **Data-Driven Insights:** Cloud services allowed Providence to collect and analyze data on patient interactions, informing future healthcare strategies and responses.
- **Continuous Updates:** The flexibility of the Azure platform enabled Providence to update screening questions and workflows in real-time, keeping pace with evolving guidelines and risk factors.

5. List of Azure services used by the customer.
Providence utilized the following Azure services:

- **Azure Health Bot:** An AI-based virtual assistant configured for COVID-19 assessment and FAQs based on CDC guidelines.
- **Azure Cognitive Services:** A family of AI-based services and APIs that provided foundational capabilities to innovate and enhance user interaction, including conversational elements for better patient engagement.

Link to the customer story: Microsoft Customer Story - Providence

Part 2 (35 Points)

Select an Azure cloud service of interest to you that is not related to Virtual Machine creation and provide the following:

1. **A brief description of the service and its capabilities in your own words (at least 1 paragraph):**

Azure DevOps is a comprehensive suite of development tools and services that facilitate **collaboration** between **software development and IT operations** teams, ultimately streamlining the application development lifecycle. It encompasses various functionalities such as **Azure Pipelines** for continuous integration and continuous delivery (CI/CD), which allows developers to automate builds and deployments; **Azure Boards** for task tracking and management that enables teams to organize their work and monitor progress; **Azure Repos** providing version control via tools like Git, which helps teams manage and track code changes efficiently; and Azure Artifacts that serves as a repository for package management. By aggregating these features into a cohesive platform, Azure DevOps not only enhances the development process but also promotes an agile and iterative approach to software development, ensuring quicker deployment and improved collaboration across teams, making it an asset for organizations looking to innovate and optimize their development efforts in the cloud.

2. **A description of how the service is billed (cost of the service):**

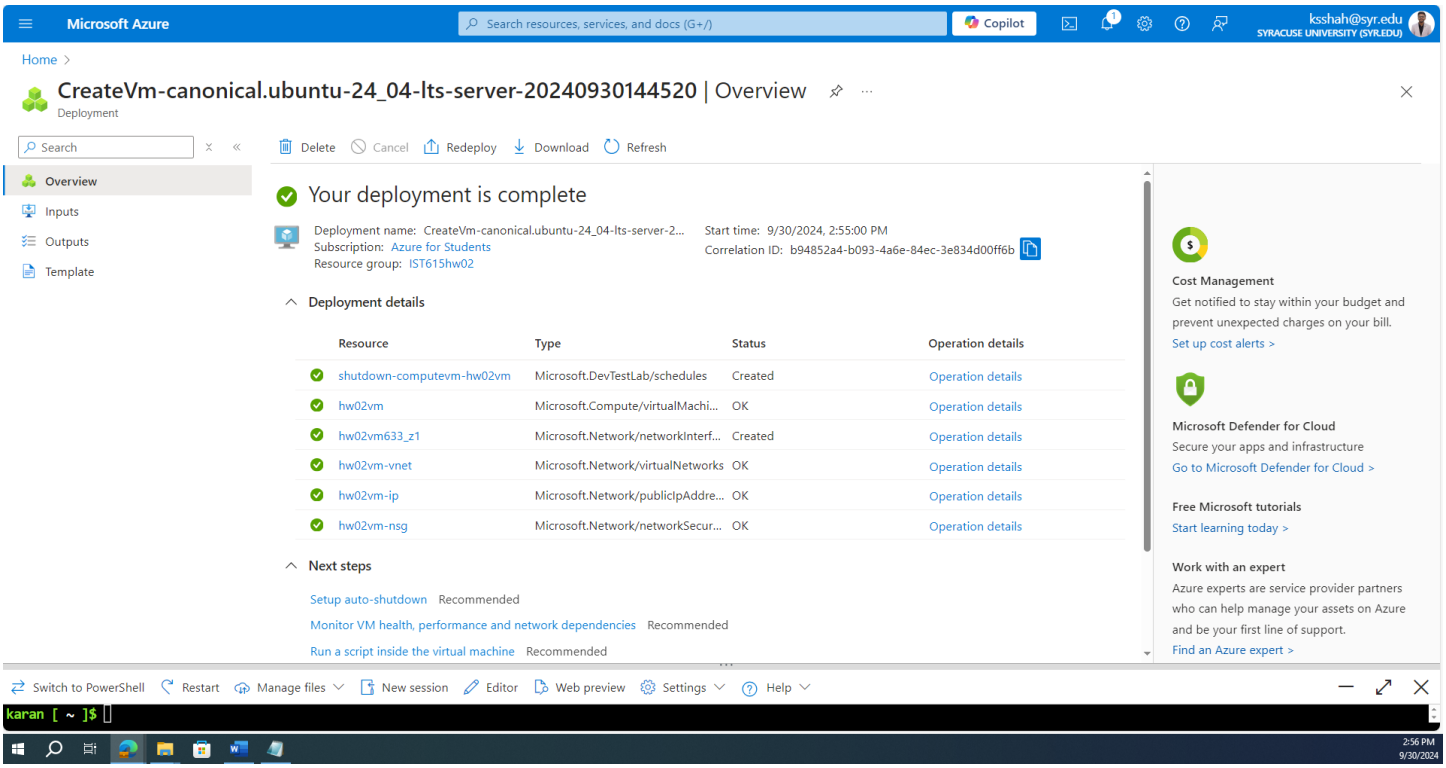
Azure DevOps is billed through a combination of free tiers and usage-based pricing. Many of the services offered by Azure DevOps have a free tier that provides a certain level of usage without any cost. For instance, Azure Pipelines offers up to 30 hours of free CI/CD usage per user per month, and Azure Repos provides unlimited private Git repositories at no cost. However, once the free tier limits are exceeded, charges apply based on usage. Azure DevOps pricing is typically based on the number of users who have basic access to the various services. The User License allows access to Azure Boards, Repos, Pipelines, and Artifacts. The cost structure often varies depending on the service in question. For example, the user license for Azure Boards and Repos has a different price point than Azure Pipelines. Additionally, certain features like Azure Test Plans or extended storage options have separate pricing structures and can be purchased as add-ons.

Organizations can also opt for a more comprehensive Enterprise plan, which offers all the Azure DevOps services without per-user restrictions and provides additional benefits like priority support and increased scale. This option is ideal for larger enterprises with extensive development needs. The cost of the Enterprise plan is based on the number of users requiring access to the platform. It's worth noting that Azure also offers volume licensing and special pricing for non-profit organizations. Furthermore, some services within Azure DevOps, such as the Azure Artifacts, have their own usage-based pricing structures, charging based on the amount of storage or the number of downloads. Overall, Azure DevOps provides flexible billing options, ensuring customers can choose a plan that best suits their development requirements and budget.

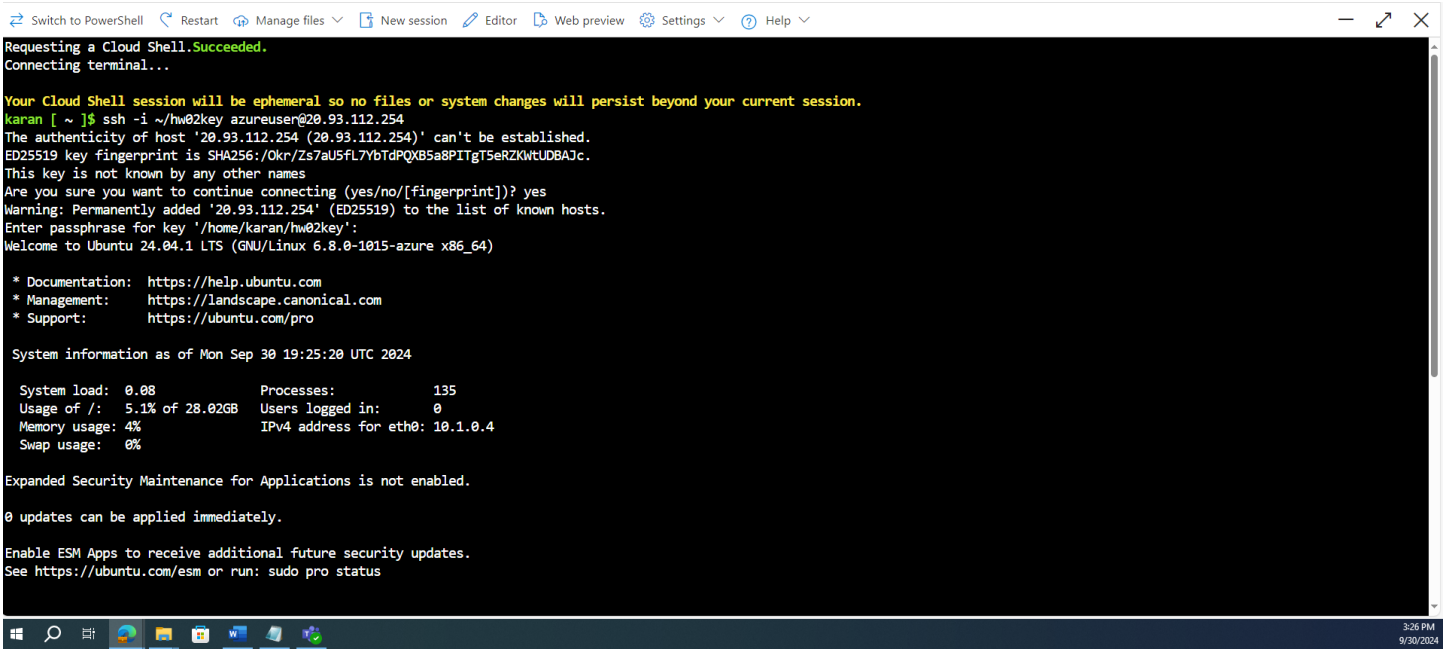
3. **A link to the official description of the service AND a link to a tutorial (doesn’t need to be from Microsoft) that you think may help in understanding and/or testing the service:**

- Official Azure DevOps Documentation
- Azure DevOps Tutorial

Part 3 (30 Points)



SCS01 – The screenshot above displays the Azure Portal with my newly created virtual machine (VM).



SCS02 – The screenshot above demonstrates that I can SSH into my new virtual machine. I opted for an alternative method to connect to the Azure VM using Azure Cloud Shell.