



Embee's Predictive Service Intelligence

Infra-Server Management Made Now Easy !

AIML Workathon 2021 | Embee Software Pvt. Ltd. | 14th December 2021



Meet the Geppetto's



Bipul Kumar Patra,
President, Technology



Jothiraman Murugesan,
Data and AI architect



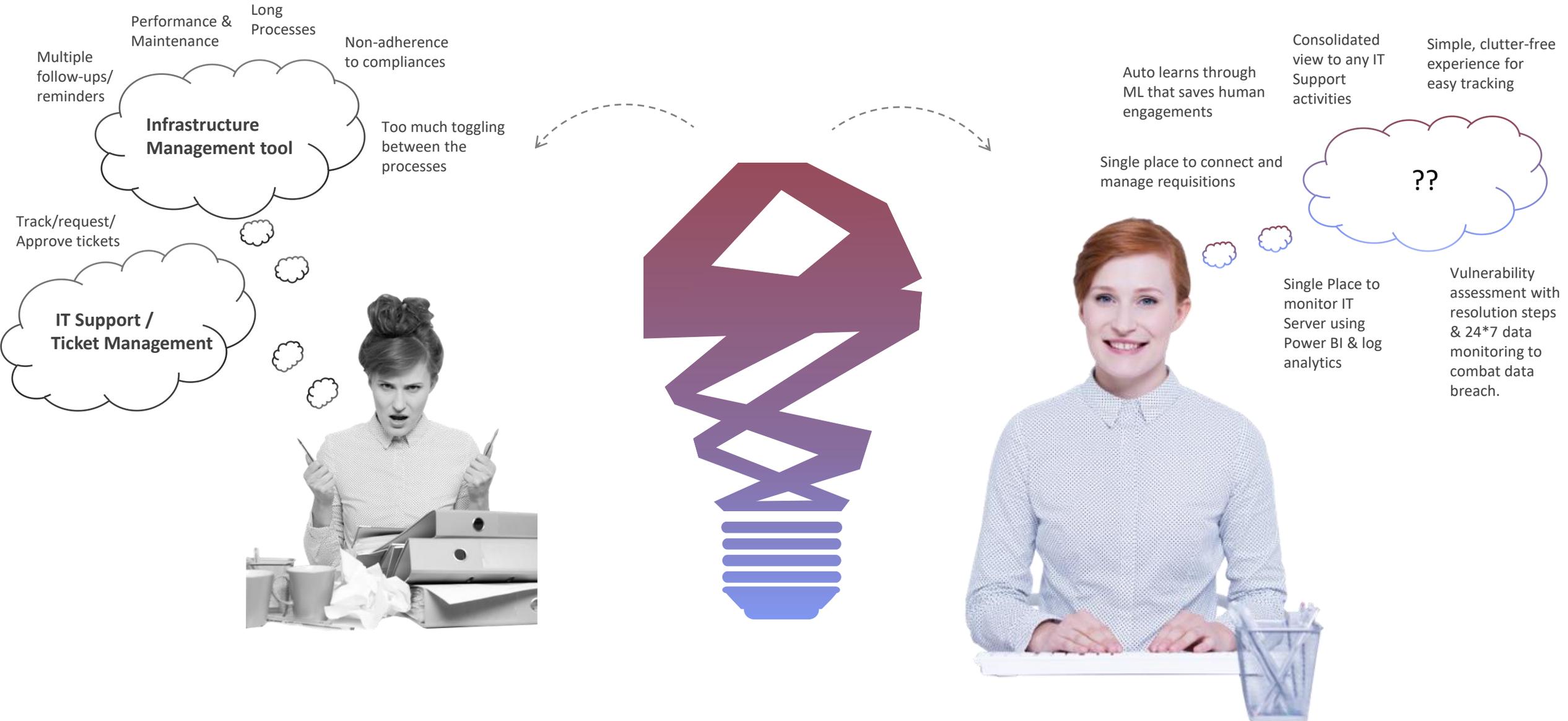
Srayasi Patra
AVP- Technology COE & PMO



Avik Sarkar
Developer-Enterprise Applications-SharePoint

And The Embee Team

Integrate, Monitor & Manage the Infrastructure



- Do service teams have end-to-end visibility of operations and infrastructure?
- Can problems be pre-empted proactively by monitoring enterprise-wide operations?
- Is machine generated data integrated with human intelligence to provide a comprehensive view of operations?
- Can IT operations be safeguarded based on past performance?

1. Embee's Predictive Service Intelligence(EPSI) is a next-generation predictive intelligence platform for your data center operations. It offers real-time, end-to-end visibility into an enterprise's operations, processes, and user experience through analysis of **continuous streaming generated data** to enhance the uptime of the systems. The tool can be used across devices and platforms, enabling the enterprise to minimize downtime and maximize operational productivity.
2. Predictive Service Intelligence prevents occurrence of critical business incidents due to infrastructure/applications issues through effective use of prescriptive and predictive analytics. It helps **identify event patterns and generate metrics**, optimizes service levels and minimizes critical business outages.
3. For instance, the platform's service intelligence capability helps predict CPU/IO wait state, network, and memory issues. It **monitors all generated events and removes false positives**, while highlighting the critical events. The platform also **predicts potential failures** of applications/infrastructure based on current events and historical behavior of systems in the enterprise, thereby, reducing critical incidents and leading to increased uptime.
4. The platform's service desk capability enables the enterprise to view the day-to-day functioning of IT operations, leading to improved transparency and high user experience. Predictive algorithms enable technicians **to pre-empt and resolve incidents** (Predictive Service Intelligence TVM). It communicates ticket resolution status through dynamic visualization and uses statistical models on past incidents to help assign accurate estimated time to resolve issues thereby improving customer satisfaction (Predictive Service Intelligence ETC).
5. Predictive Service Intelligence offers a customized self-help engine, the **Predictive Service Intelligence BOT**, which is an intelligent end user assistant. The feature provides inputs to the users for them to resolve the issues. Through the web-based personalized dashboard, the end user is updated on selected and completed tickets as well as the likely time to resolve the issues.
6. The feature identifies and notifies end users of system wide incidents and open tickets for the issue, **leading to quicker resolution of tickets and reduced number of overall tickets**.

Tools & Technologies

Azure ML Studio

Azure AI Builder

Azure Cognitive services

- Anomaly detector
- Q&A maker
- Key phrase extractor

Azure stream

Power BI

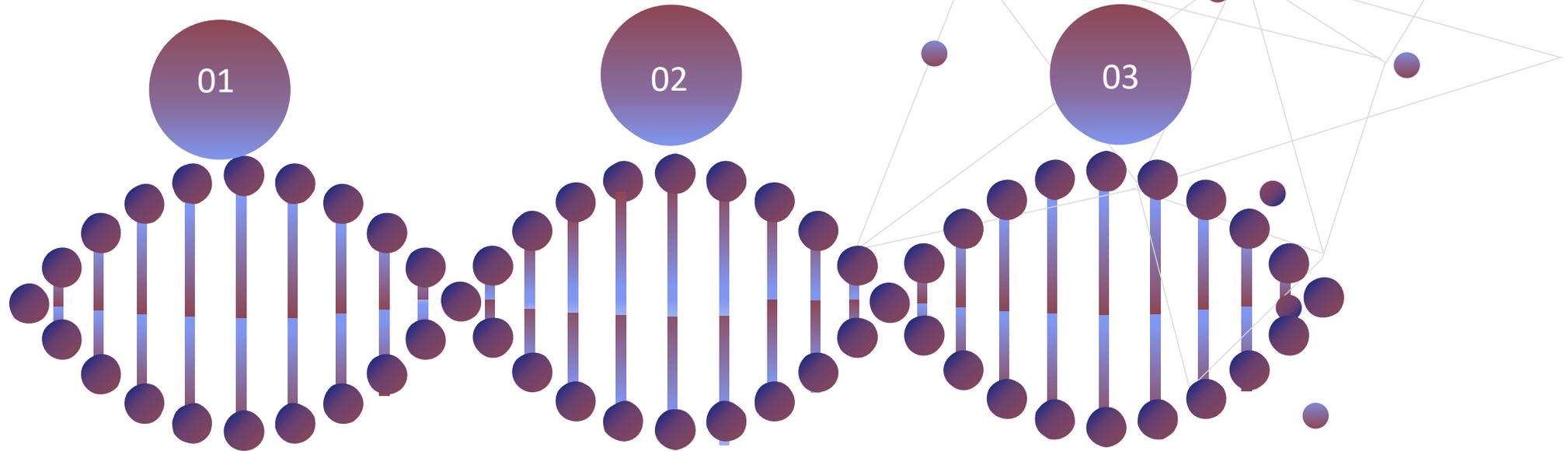
Log Analytics Workspace

Azure Sentinel

Azure Active Directory

Azure Infrastructure(VM, VNet)

DNA of EPSI



01 Developed for intelligent IT

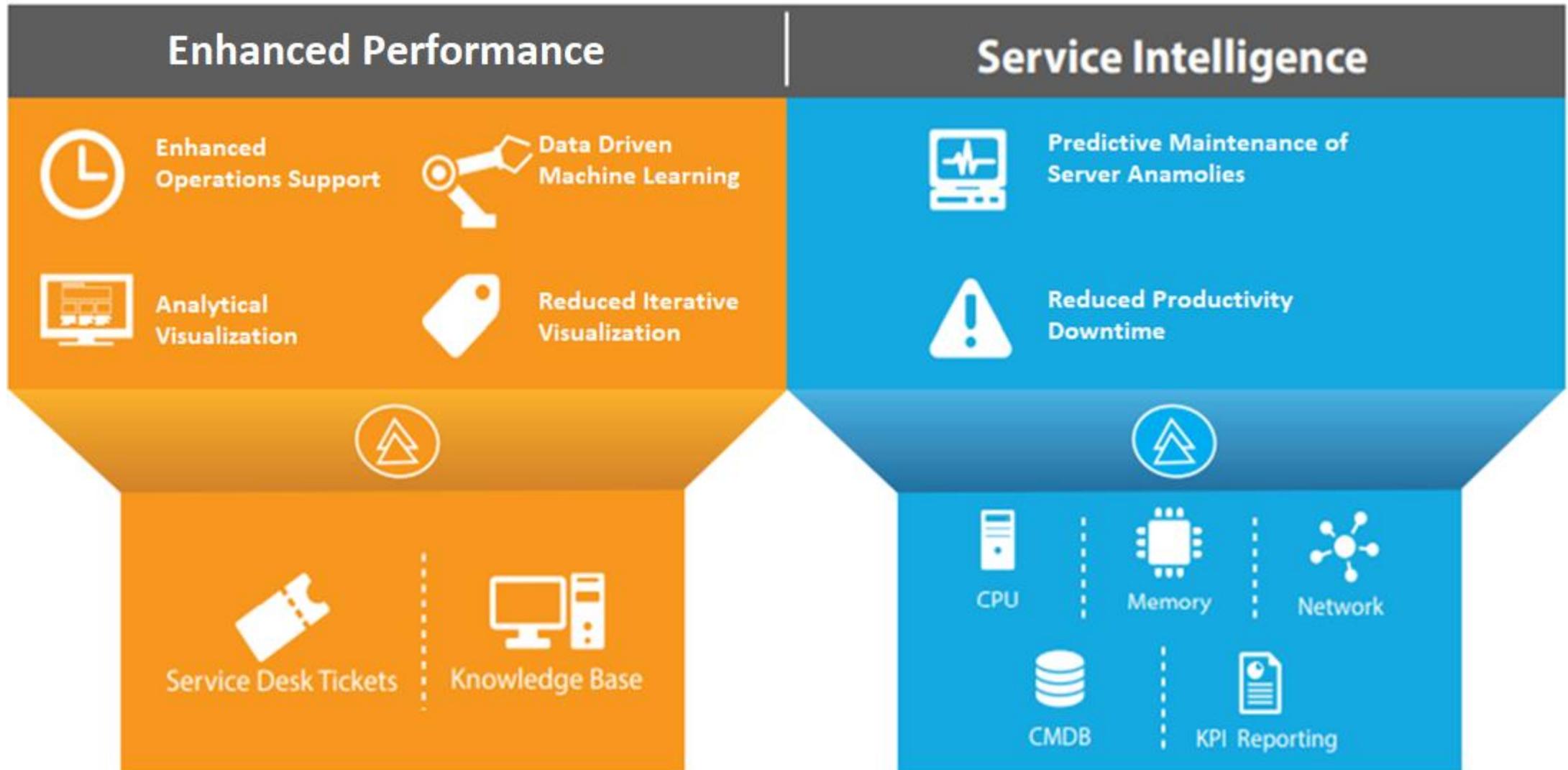
Plugged in with the power of AI, ML & automation to ensure enterprise data center and cloud operations are managed intelligently with maximum uptime and less human efforts

02 Mitigation & Adaptation

EPSI is built for Enterprises to simplify tasks like IT based operational challenges, requests & issue management for continuous monitoring and controlling IT operations

03 Built to perform Services, Extra

EPSI can be implemented within 1-2 weeks by our Embee feisty team. It's built for the 'Doers', the 'Go-getters' to simplify complex IT operations.



Our purpose

Why EPSI? [For Infrastructure]



Improved monitoring & automating

With ticket management system the app is ready to respond with an ML bot that saves the human engagements to resolve the user queries



360-degree maintenance of IT Infrastructure

Connecting EPSI with power BI helps in decision making especially regarding security, optimisation and resource utilization.



Saves time

The power of AI & automation ensures the infrastructure is well maintained and the IT support is provided at regular intervals



Instant information about anonymous activity

Continuously monitor user login details to identify suspicious logins, windows events, sign-in history of the user to enhance the performance of the server



Improved communication

Instant support from the ML bot to follow up on any tickets or issues. Get instant clarification from the bot



Enhances Over Time

EPSI enhances the operational data with machine learning expertise which is learnt over the time that makes the system Robust and Reliable

01

Improve planning & Decision making

02

360 view of Infrastructure Management

03

Saves time and manpower

04

Instant update about any anonymous activity

05

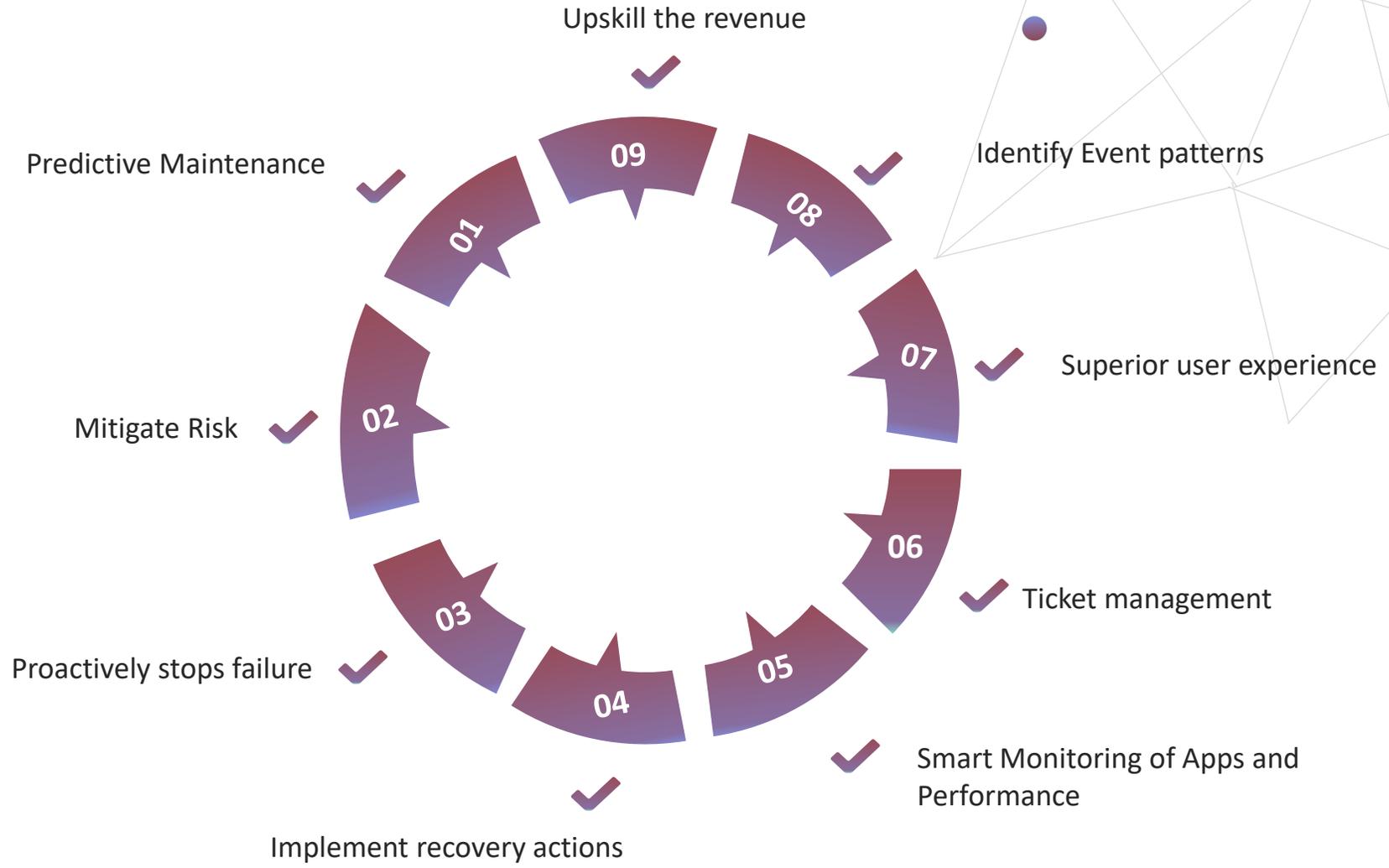
Improved communication

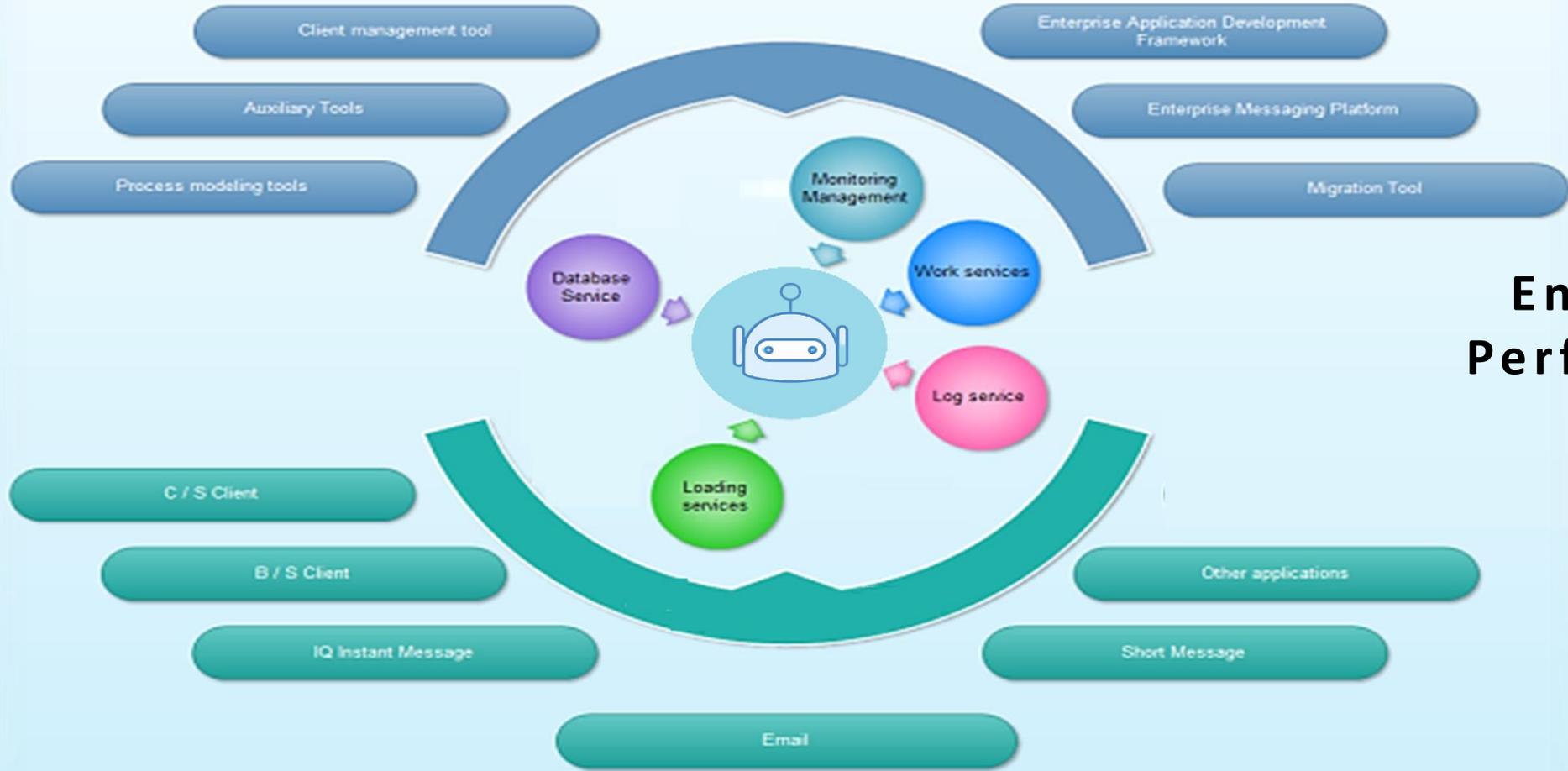
06

Machine learning strategy on developing intelligence

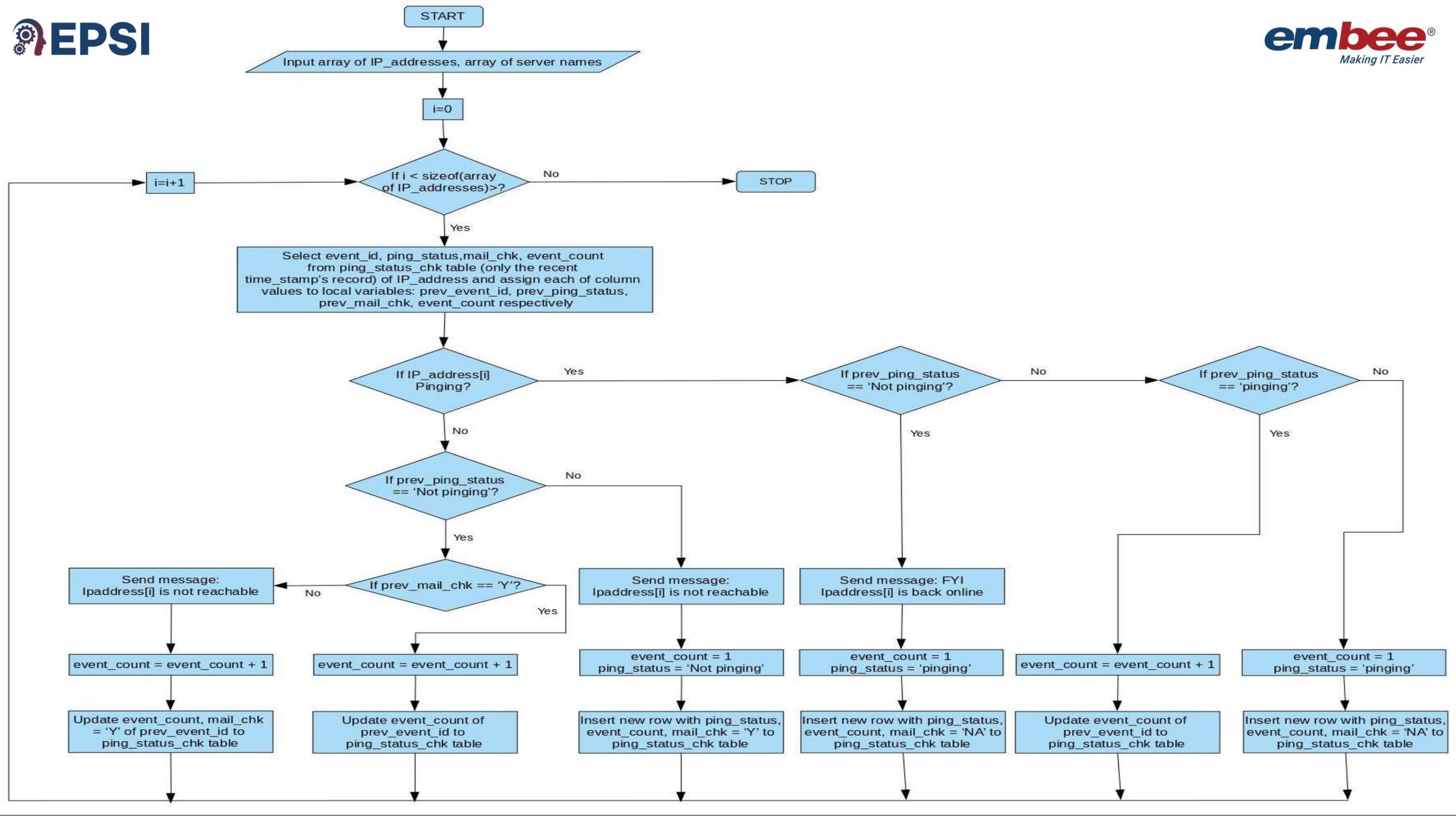
What's next?

Building The Future of Automation, Brick by Brick

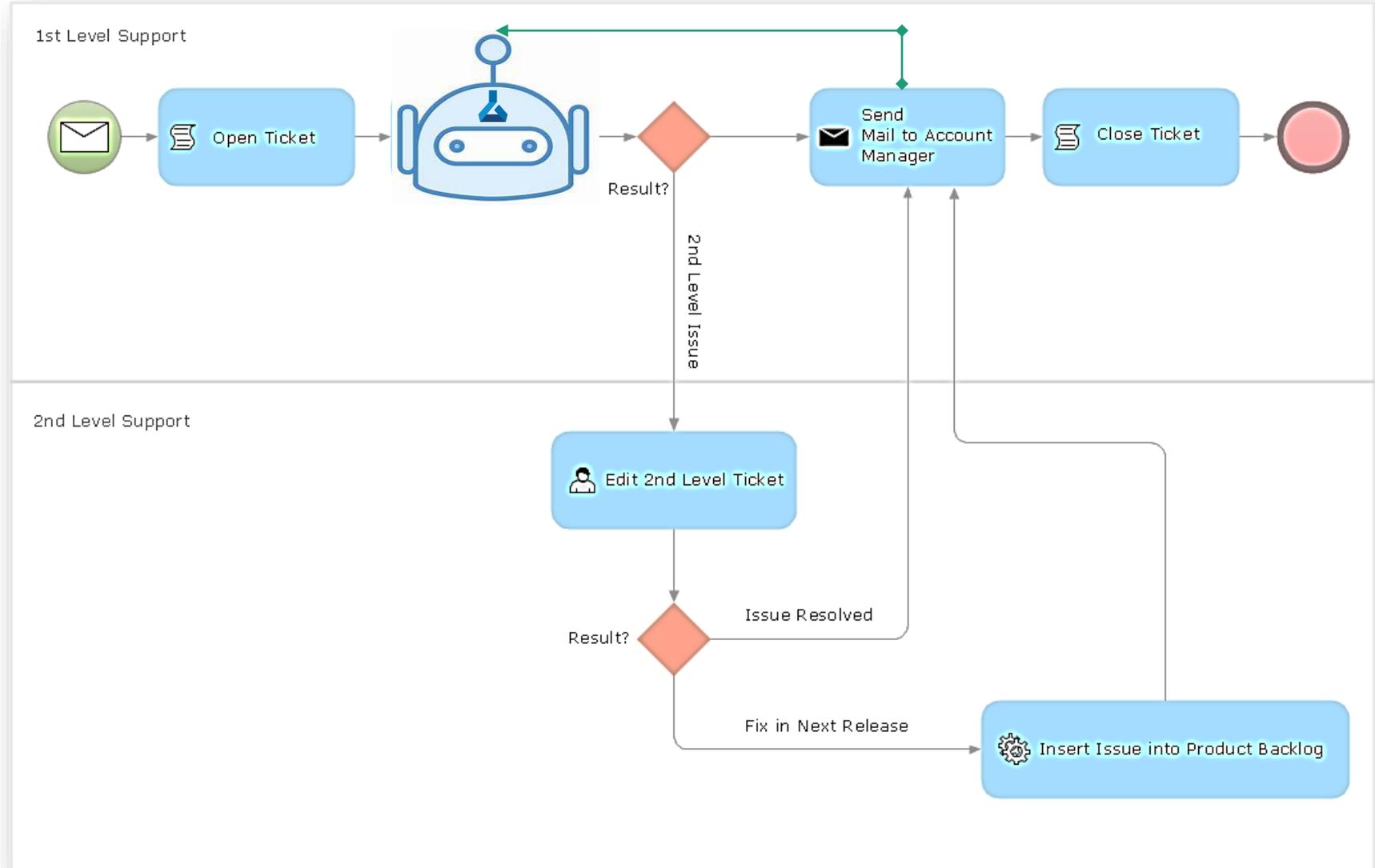


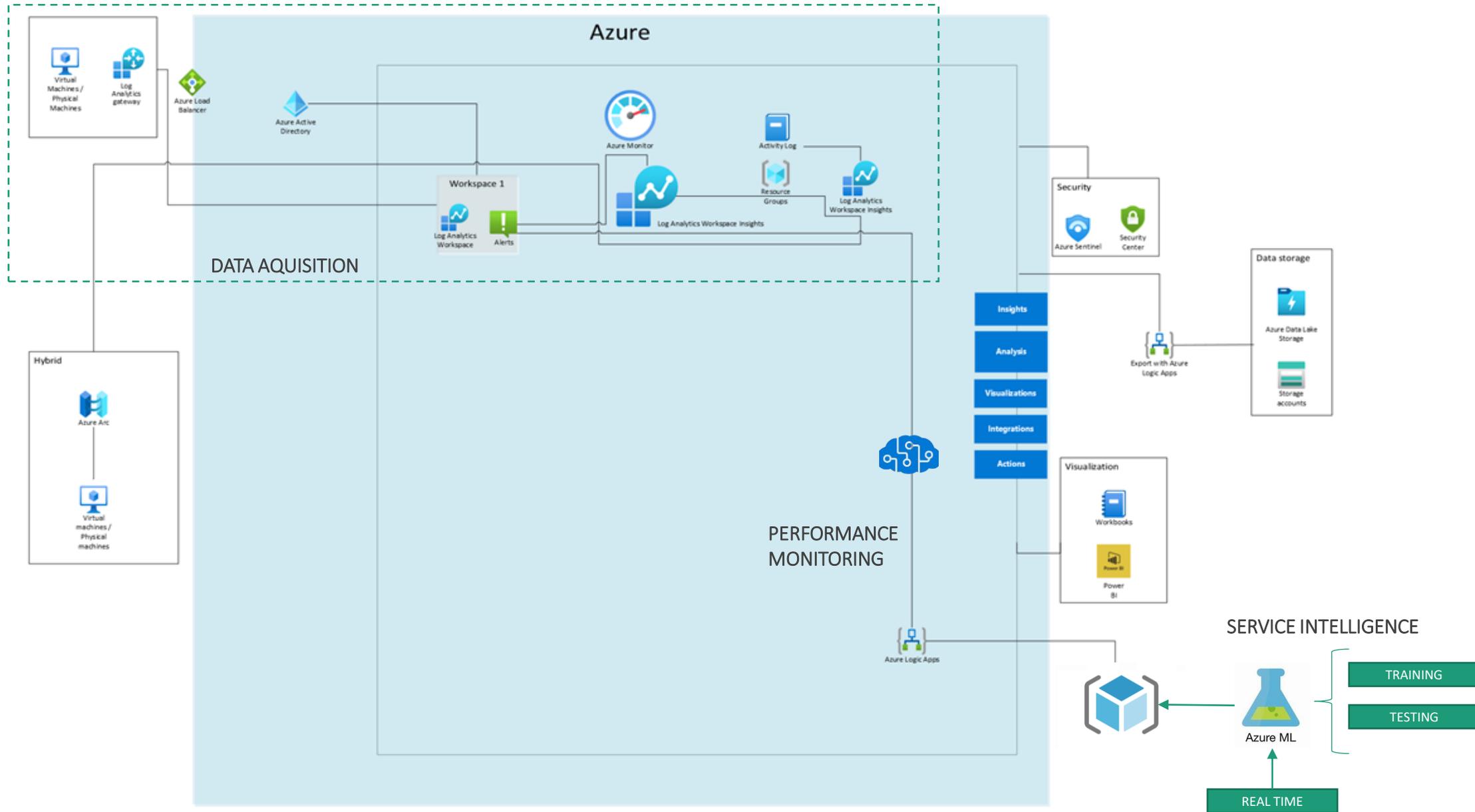


**Enhanced
Performance**



Service Intelligence Flow





SOLUTION ARCHITECTURE

Launching with the Power of Azure

01 Azure Automation

02 Azure Virtual Machine

03 Azure Firewall/NGFW

04 Azure Defender & Sentinel

05 Log Analytics

06 Logic Apps

07 Azure File Share/
NetApps with FSLogix



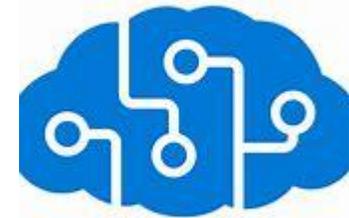
PowerApps and AI builder



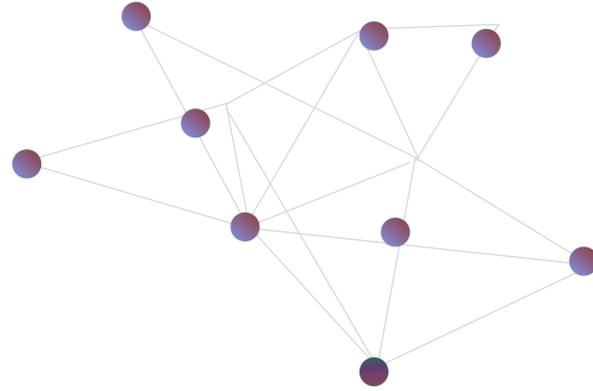
From PowerApps user will raise the ticket, and the data will save to SharePoint custom list



Using AI builder, we can generate Adaptive responses for Detections on server and ticket management systems

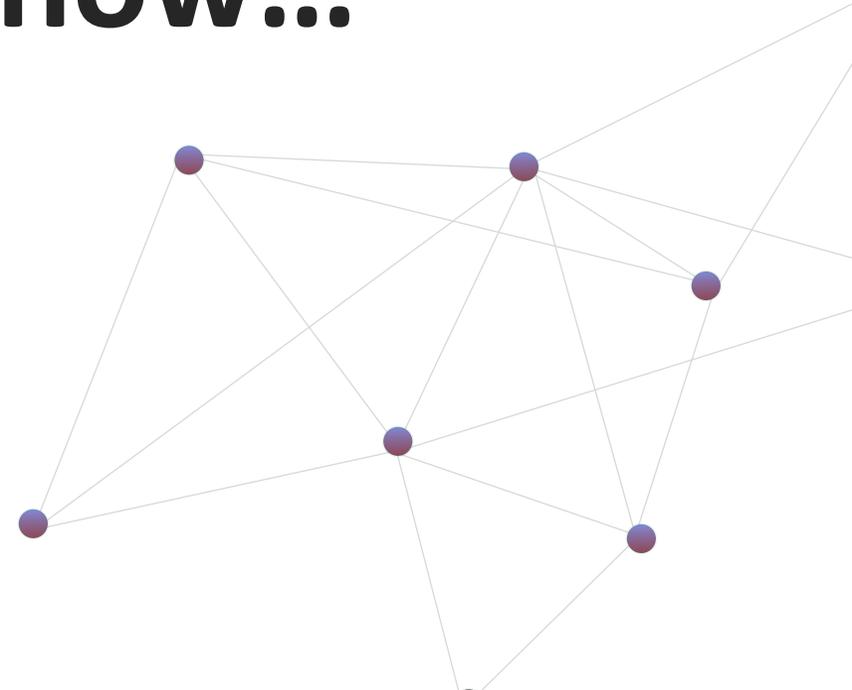


Users can check the notification and using the hyperlink in Adaptive card they can directly access the application and they take respective action for that ticket. AI builder with its supervised learning capability it builds the adaptive methodology



Experience the power of organized

The demo begins now...



ServerManagement | Deployments

Resource group

Search (Ctrl+/) Refresh Cancel Redeploy Delete View template

Filter by deployment name or resources in the deployment...

Deployment name	Status	Last modified	Duration	Related
Microsoft.LogAnalyticsOMS	Succeeded	12/9/2021, 10:34:11 AM	33 seconds	Related
Microsoft.CognitiveServicesAno...	Succeeded	12/9/2021, 12:19:56 AM	34 seconds	Related
Microsoft.PublicIPAddress-2021...	Succeeded	12/9/2021, 12:13:30 AM	25 seconds	Related
Microsoft.VirtualNetwork-20211...	Succeeded	12/8/2021, 11:51:45 PM	17 seconds	Related
Microsoft.PublicIPAddress-2021...	Succeeded	12/8/2021, 9:35:33 AM	33 seconds	Related
Microsoft.CognitiveServicesAno...	Succeeded	12/6/2021, 11:53:32 AM	33 seconds	Related
Microsoft.Azure.SynapseAnalyti...	Failed (Error details)	12/1/2021, 10:20:35 PM		

Left sidebar menu:

- Overview
- Activity log
- Access control (IAM)
- Tags
- Resource visualizer
- Events
- Settings
 - Deployments
 - Security
 - Policies
 - Properties
 - Locks
- Cost Management
 - Cost analysis
 - Cost alerts (preview)
 - Budgets

Server Adaption & Logs

Operation name	Status	Time	Time stamp	Subscription
Stop schedules Edit compute start	Succeeded	14 minutes ...	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN
Stop schedules Edit compute start	Succeeded	15 minutes ...	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN
Create Deployment	Failed	2 hours ago	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN
Check Server Name Availability	Succeeded	2 hours ago	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN
Validate Deployment	Succeeded	2 hours ago	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN
Validate Deployment	Succeeded	2 hours ago	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN
Export template for deployment	Succeeded	2 hours ago	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN
Create Deployment	Failed	2 hours ago	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN
Check Server Name Availability	Succeeded	2 hours ago	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN
Validate Deployment	Succeeded	2 hours ago	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN
Checks Workspace name availability.	Succeeded	2 hours ago	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN
Check Server Name Availability	Succeeded	2 hours ago	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN
Validate Deployment	Succeeded	2 hours ago	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN
Checks Workspace name availability.	Succeeded	2 hours ago	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN
Check Server Name Availability	Succeeded	2 hours ago	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN
Checks Workspace name availability.	Failed	2 hours ago	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN
Check Server Name Availability	Failed	2 hours ago	Sat Dec 11 ...	Visual Studio Enterprise Subscription - MPN

loganalysisserver | Activity log

Log Analytics workspace

Search (Ctrl+/) << Activity Edit columns Refresh Diagnostics settings Download as CSV Logs Pin current filters Reset

17 items.

Operation name	Status	Time	Time stamp	Subscription
▼ Create Workspace	Succeeded	4 minutes a...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN
Write Workspaces	Started	15 minutes ...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN
Create Workspace	Started	15 minutes ...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN
Write Workspaces	Accepted	14 minutes ...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN
Create Workspace	Accepted	14 minutes ...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN
▼ List Workspace Shared Keys	Succeeded	6 minutes a...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN
List Workspace Shared Keys	Started	6 minutes a...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN
List Workspace Shared Keys	Started	6 minutes a...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN
List Workspace Shared Keys	Succeeded	6 minutes a...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN
▼ Create Storage Configuration	Succeeded	12 minutes ...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN
Create Storage Configuration	Started	12 minutes ...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN
Create Storage Configuration	Started	12 minutes ...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN
Create Storage Configuration	Succeeded	12 minutes ...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN
▼ Create Storage Configuration	Succeeded	12 minutes ...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN
Create Storage Configuration	Started	12 minutes ...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN
Create Storage Configuration	Started	12 minutes ...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN
Create Storage Configuration	Succeeded	12 minutes ...	Thu Dec 09 ...	Visual Studio Enterprise Subscription – MPN

Alert rules

+ Create Columns Refresh Delete Enable Disable

Subscription: Visual Studio Enterprise Subscription – MPN Resource group: ServerManagement Resource type: All Resource: ServerMngmt Signal type: All signal types Status: Enabled

Severity: All

Displaying 1 - 2 rules out of total 2 rules

Search alert rules based on rule name and condition...

Name	Condition	Severity	Target resource	Target resource type	Signal type	Status
<input type="checkbox"/> ClientError	Whenever the total clienterrors i...	0 - Critical	ServerMngmt	Cognitive Services	Metrics	Enabled
<input type="checkbox"/> Metrics	Whenever the following conditio...	3 - Informational	ServerMngmt	Cognitive Services	Metrics	Enabled

Recommendation Status

Active

Overview Cost (0) Security (5) Reliability (0) Operational excellence (0) Performance (0) All (5)

Total recommendations: 5

Recommendations by impact: 3 High impact, 1 Medium impact, 1 Low impact

Impacted resources: 1

Impact	Description	Category	Last updated
High	CPU utilization crossed more than 60% There may be latency occurrences	Server Manager	12/13/2021, 03:30 AM
High	Invoking RSA encryption from Uncategorized Device	Security	12/13/2021, 01:06 AM
High	Endpoint becomes negative on the communication deployment	Server Manager	12/13/2021, 01:06 AM
Medium	Guest Server Configuration not updated with the latest Ubuntu - 20.04	Server Manager	12/13/2021, 01:06 AM
Low	Azure Backup should be enabled for virtual machines	Security	12/13/2021, 01:06 AM

Performance Recommendation

Microsoft Azure Machine Learning Studio

Home > Compute > ServerTktManager

ServerTktManager

Resource properties

Status
Running

Last operation
Created at Dec 11, 2021 5:02 AM: Succeeded

Virtual machine size
Standard_DS3_v2 (4 cores, 14 GB RAM, 28 GB disk)

Processing unit
CPU - General purpose

Additional data storage
--

Applications
JupyterLab Jupyter VS Code RStudio Terminal

Created on
12/11/2021, 5:02:22 AM

SSH access
Disabled

Private IP address
10.0.0.5

Virtual network/subnet
--

Public IP address
20.204.226.60

Schedules

Startup schedule
Start time
1:00 AM (UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi
Active days
Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday

Shutdown schedule
Stop time
10:00 PM (UTC+05:30) Chennai, Kolkata, Mumbai, New Delhi
Active days
Monday, Tuesday, Wednesday, Thursday, Friday

AzureML-sklearn-0.24-ubuntu18.04-py37-cpu Version: 7

Refresh

Details

Name
AzureML-sklearn-0.24-ubuntu18.04-py37-cpu

Version
7

Environment image
viennaglobal.azurecr.io/azureml/azureml_394e2e840889e83d9ee77a40dd82b83c

Created by
Microsoft

Created
Sep 9, 2021 3:42 AM

Description
An environment for tasks such as regression, clustering, and classification with Scikit-learn. Contains the Azure ML SDK and additional python packages.

Tags
Scikit-learn : 0.24.1

YAML of job definition

Copy YAML

```

1 description: null
2 tags:
3   _aml_system_ComputeTargetStatus: >-
4     {"AllocationState": "steady", "PreparingNodeCount": 0, "RunningNodeCount": 1}
5 mlflow.source.type: JOB
6 mlflow.source.name: run_dataset_action.py
7 properties:
8   _azureml.ComputeTargetType: amlcompute
9   ContentSnapshotId: bb2a6979-7ae2-4694-a9a7-43b813bc9923
10  ProcessInfoFile: azureml-logs/process_info.json
11  ProcessStatusFile: azureml-logs/process_status.json
12 provisioningState: Succeeded
13 interactionEndpoints:
14   Tracking:
15     jobEndpointType: Tracking
16     port: null
17     endpoint: >-
18     azureml://centralindia.api.azureml.ms/mlflow/v1.0/subscriptions/38a0f9c9-7aa3-4604-9c14-fa5f052bfe59/resourceGroups/
19     ServerManagement/providers/Microsoft.MachineLearningServices/workspaces/servermngmt?
20   properties: null
21   Studio:
22     jobEndpointType: Studio
23     port: null
24     endpoint: >-
25     https://ml.azure.com/runs/dataset_d79aebf9-2cbf-4790-b492-c99f62657a0f?wsid=/subscriptions/38a0f9c9-7aa3-4604-9c14-fa5f052bfe59/
26     resourceGroups/ServerManagement/workspaces/servermngmt
27   properties: null
28 jobType: Command
29 compute:
30   target: >-
31     /subscriptions/38a0f9c9-7aa3-4604-9c14-fa5f052bfe59/resourceGroups/ServerManagement/providers/Microsoft.MachineLearningServices/
32     workspaces/servermngmt/computes/ServerTktManager
33   instanceCount: 1
  
```

ML Deployment

Create dataset Refresh Update authentication Set as default datastore

This is a preview with limited file settings available. More options exist during dataset creation.

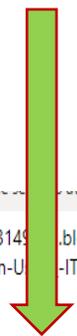
Path: https://servermngmt8073149061.blob.core.windows.net/azureml-blobstore-ad7f0594-baec-4e8b-a26a-092ddec25899/Saveddataset/00000000-0000-0000-0000-000000000000/actions/a9aadb5-0b5e-4e36-8095-e30d1deae1ee/preview_result.csv

File size: 808.6 KiB

With column header:

Owner Name	Resolution Rem...	Source	Sub-Category	Subject	Type
Syshelpdesk	Asked IT team to check local windows profile We have chec...	Email	Outlook	Outlook prompting to enter pwd - Veeranna _IMS44611	Incident
Syshelpdesk	Duplicate ticket Ref-135178	Email	Outlook	EXTERNAL :IMS44635 - Incident Assigned	Incident
navda	MS team (28212468) resolved the case.	Phone	Outlook	Error in configuring outlook - digvijay mohite _IMS44635	Incident
navda	Hello Team, Harish.Kumar1@maric... has been added to ...	Phone	ID Creation/Deletion/Moc	SR19141 - DL Addition	Service Reques
Syshelpdesk	We have changed the archival policy to 6	Email	Outlook	Archive Mailbox Policy 6 months - ankit.tahalan	Service Reques

Captured End points



Path: https://servermngmt8073149061.blob.core.windows.net/azureml-blobstore-ad7f0594-baec-4e8b-a26a-092ddec25899/UI/12-10-2021_110939_UTC/WA_Fn-UseC-IT-Help-Desk.csv

File size: 7.985 MiB

With column header:

Owner	FiledAgainst	TicketType	Severity	Priority	daysOpen
	Systems	Issue	2 - Normal	0 - Unassigned	3
	Software	Request	1 - Minor	1 - Low	5
	Access/Login	Request	2 - Normal	0 - Unassigned	0
	Systems	Request	2 - Normal	0 - Unassigned	20
	Access/Login	Request	2 - Normal	1 - Low	1
	Access/Login	Request	2 - Normal	3 - High	0
	Systems	Request	2 - Normal	3 - High	9
	Software	Request	2 - Normal	0 - Unassigned	15
	Software	Request	2 - Normal	2 - Medium	6
	Access/Login	Request	2 - Normal	1 - Low	1
	Software	Request	2 - Normal	3 - High	7

Machine Learning Blob

Data Labels

General

Datstore name
workspaceblobstore

Datstore type
Azure Blob Storage

Created by

Subscription ID
38a0f9c9-7aa3-4604-9c14-fa5f052bfe59

Resource group name
servermanagement

Protocol
https

Endpoint
core.windows.net

Account name
[servermngmt8073149061](#)

Blob container
azureml-blobstore-ad7f0594-baec-4e8b-a26a-092ddec25899

Data URL
<https://servermngmt8073149061.blob.core.windows.net/azureml-blobstore-ad7f0594-baec-4e8b-a26a-092ddec25899>

Created on
Dec 11, 2021 4:30 AM

```

...
ticketDf['Satisfaction'].replace(to_replace='0 - Unknown',value=0,inplace=True)
ticketDf['Satisfaction'].replace(to_replace='1 - Unsatisfied',value=0,inplace=True)
ticketDf['Satisfaction'].replace(to_replace='2 - Satisfied',value=1,inplace=True)
ticketDf['Satisfaction'].replace(to_replace='3 - Highly satisfied',value=1,inplace=True)
...

ticketDf['Satisfaction'].replace(to_replace='0 - Unknown',value=0,inplace=True)
ticketDf['Satisfaction'].replace(to_replace='1 - Unsatisfied',value=1,inplace=True)
ticketDf['Satisfaction'].replace(to_replace='2 - Satisfied',value=2,inplace=True)
ticketDf['Satisfaction'].replace(to_replace='3 - Highly satisfied',value=3,inplace=True)

ticketDf['Severity'].replace(to_replace='0 - Unclassified',value=0,inplace=True)
ticketDf['Severity'].replace(to_replace='1 - Minor',value=1,inplace=True)
ticketDf['Severity'].replace(to_replace='2 - Normal',value=2,inplace=True)
ticketDf['Severity'].replace(to_replace='3 - Major',value=3,inplace=True)
ticketDf['Severity'].replace(to_replace='4 - Critical',value=4,inplace=True)

ticketDf["daysOpen"] = pd.cut(ticketDf["daysOpen"],bins=5)

dummiesDf = pd.get_dummies(ticketDf)
dummiesDf.head(30)
plot.figure(figsize=(15,10))
dummiesDf.corr()['Satisfaction'].sort_values(ascending=False).plot(kind='bar')

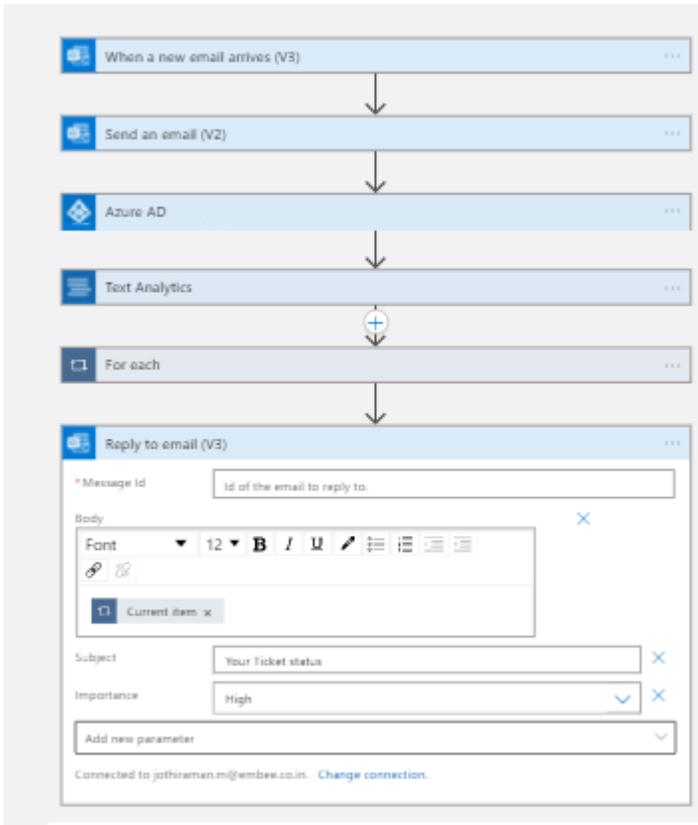
# Conclusion: as per correlation, Severty_3 major, ITowner, Severty_4 critical positively c
# Whereas, DaysOpen and Severty_2 Minor negetively correlated with Satisfaction
    
```

Data Labeling

+ Add project Refresh Delete

Project name	Label data	Progress	Type	State	Created on ↓	Created by
MachineLearningTicket		16/16	Object Identification (Bounding...	Passed	Dec 09, 2021 8:41 PM	Jothiraman M

Logic App Configuration



Json view

```

Resource JSON
sertickettriggering
Resource ID
/subscriptions/38a0f9c9-7aa3-4604-9c14-fa5f052bfe59/resourcegroups/ServerManagement/providers/Microsoft.Logic/workflows/sertickettriggering
2015-08-01-preview
1
2
3
4
5
6
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8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
{
  "properties": {
    "provisioningState": "Succeeded",
    "createdTime": "2021-12-14T10:10:13.9688143Z",
    "changedTime": "2021-12-14T10:11:55.3019966Z",
    "state": "Enabled",
    "version": "08585621301701822481",
    "accessEndpoint": "https://prod-65.eastus.logic.azure.com:443/workflows/b6a27d86e58541a7977d6145efd5a32",
    "definition": {
      "$schema": "https://schema.management.azure.com/providers/Microsoft.Logic/schemas/2016-06-01/workflowdefinition.json#",
      "contentVersion": "1.0.0.0",
      "parameters": {},
      "triggers": {
        "manual": {
          "type": "Request",
          "kind": "Http",
          "inputs": {}
        }
      },
      "actions": {},
      "outputs": {}
    }
  }
}
  
```

Essentials

Resource group (Move) : ServerManagement
 Location : East US
 Subscription (Move) : Visual Studio Enterprise Subscription – MPN
 Subscription ID : 38a0f9c9-7aa3-4604-9c14-fa5f052bfe59

Definition : 1 trigger, 0 actions
 Status : Enabled
 Runs last 24 hours : 0 successful, 0 failed
 Integration Account : ---

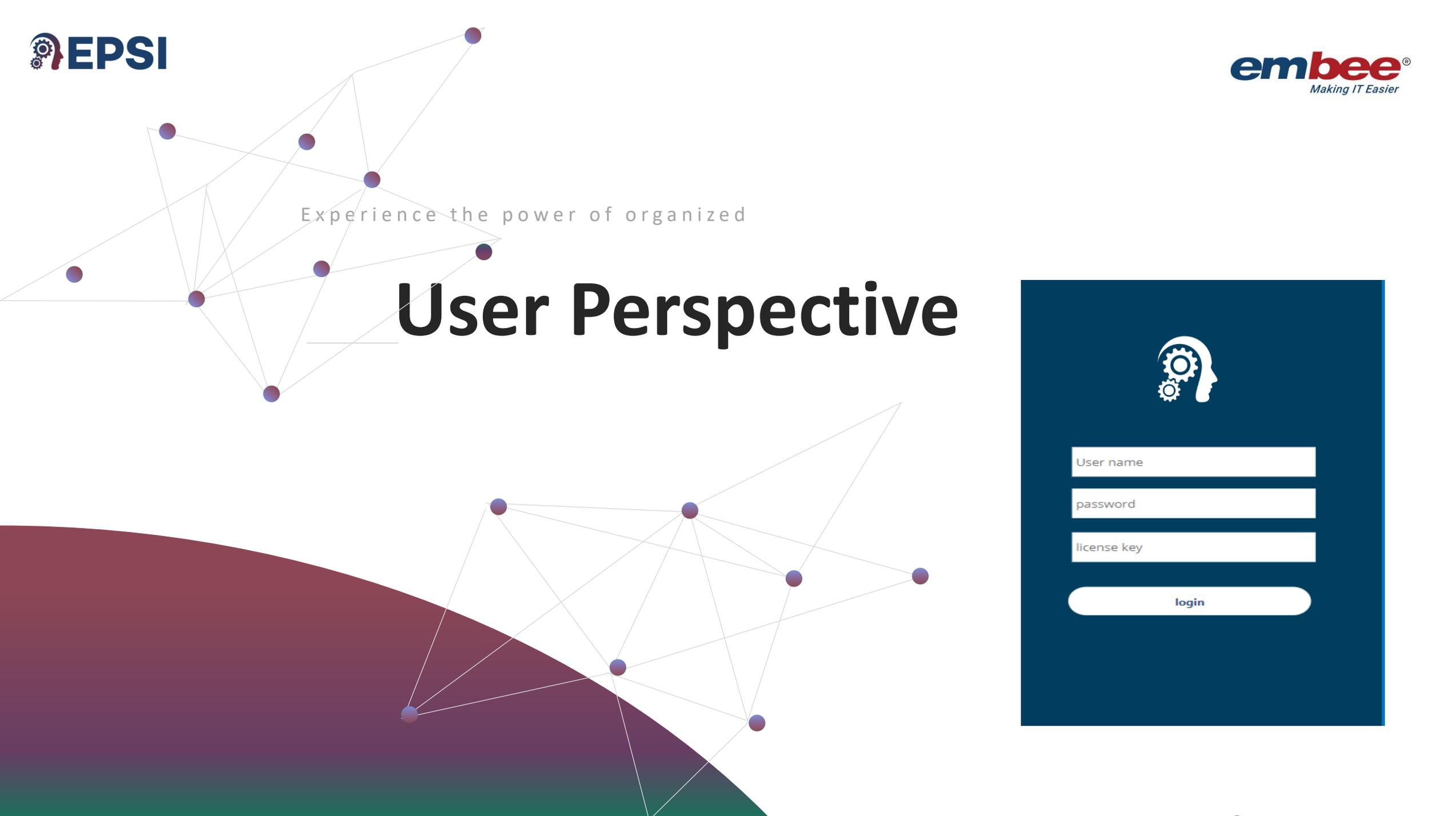
Get started Runs history Trigger history Metrics

All Start time earlier than Pick a date

Specify the run identifier to open monitor view directly

Status	Start time	Identifier	Duration
✔ Succeeded	11/15/2021, 10:18 AM	08585620631957698705571806208CU64	66 Milliseconds
✔ Succeeded	11/15/2021, 10:17 AM	08585620632116944506675829463CU71	76 Milliseconds
✔ Succeeded	11/15/2021, 10:17 AM	08585620632327657150111956313CU40	61 Milliseconds
✔ Succeeded	10/15/2021, 10:17 AM	08585620632387138939468125769CU47	84 Milliseconds
✔ Succeeded	10/15/2021, 10:17 AM	08585620632421937600502914806CU71	88 Milliseconds
✔ Succeeded	10/15/2021, 10:17 AM	08585620632503377262886201425CU95	149 Milliseconds
✔ Succeeded	10/15/2021, 10:17 AM	08585620632550200846949374532CU62	113 Milliseconds
✔ Succeeded	10/15/2021, 10:17 AM	08585620632593975014769251398CU93	229 Milliseconds
✔ Succeeded	10/15/2021, 10:16 AM	08585620632812761738936481021CU62	117 Milliseconds

Status log

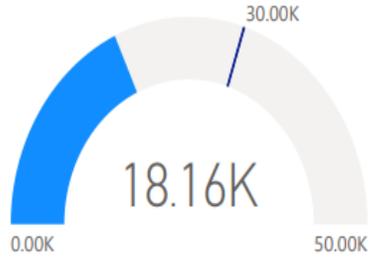


Experience the power of organized

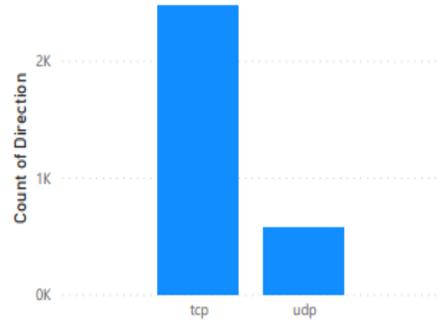
User Perspective



Cpu Speed

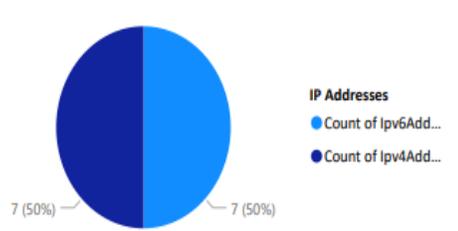


Count of Direction by Protocol

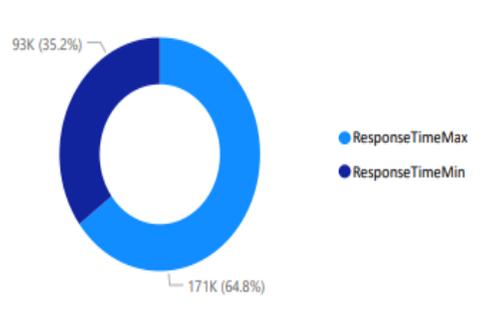


SourceSystem	OpsManager	Total			
TenantId	ResponseTimeMax	ResponseTimeMin	Severity	ResponseTimeMax	ResponseTimeMin
cb52fafa-6705-4d70-b5db-1e5b3c306a3e	171346	93066		171346	93066
Total	171346	93066		171346	93066

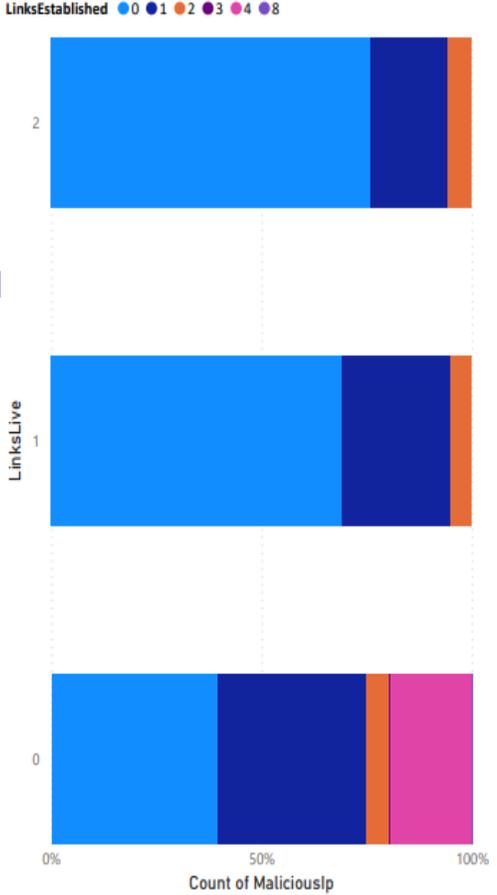
IPv4 vs IPv6



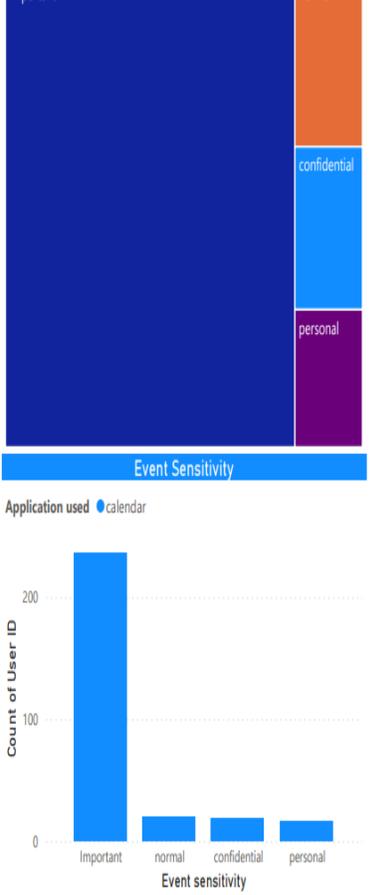
Links VS Malicious IP



Malicious IP vs Link Establishment

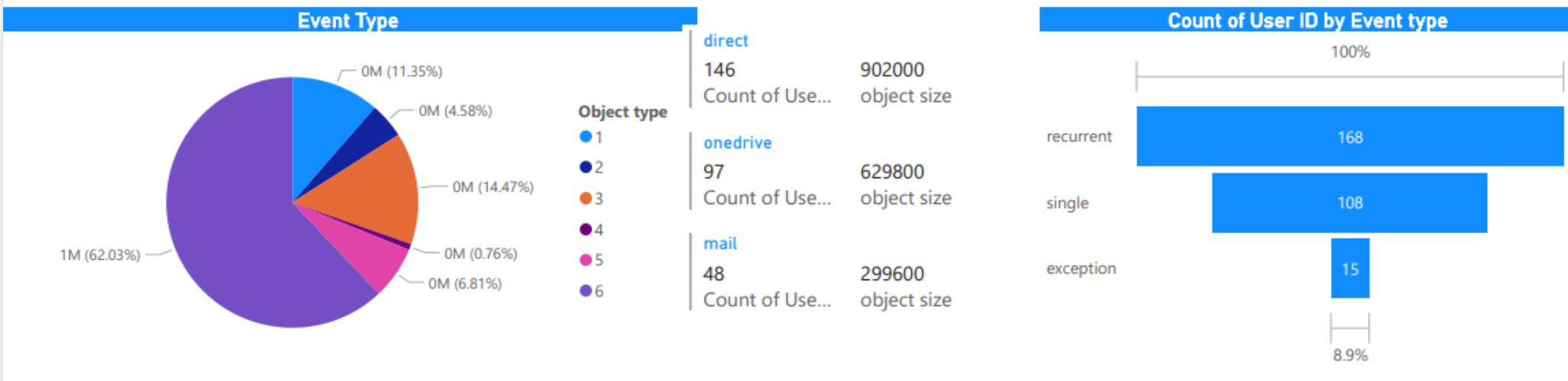
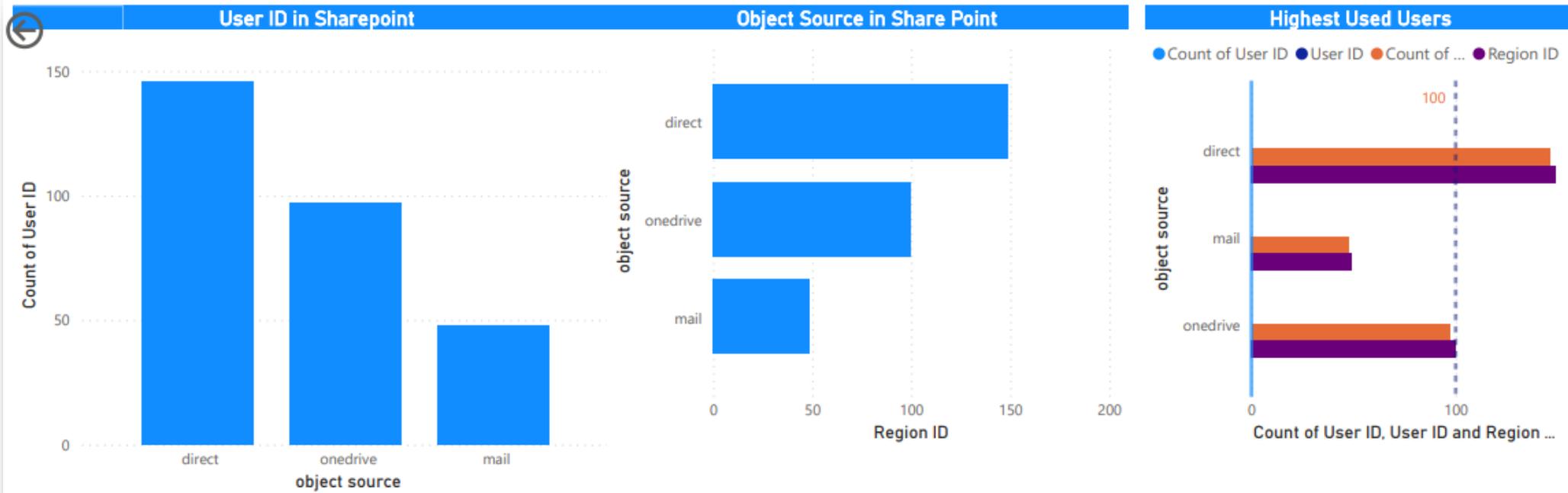


Count of User ID by Event sensitivity

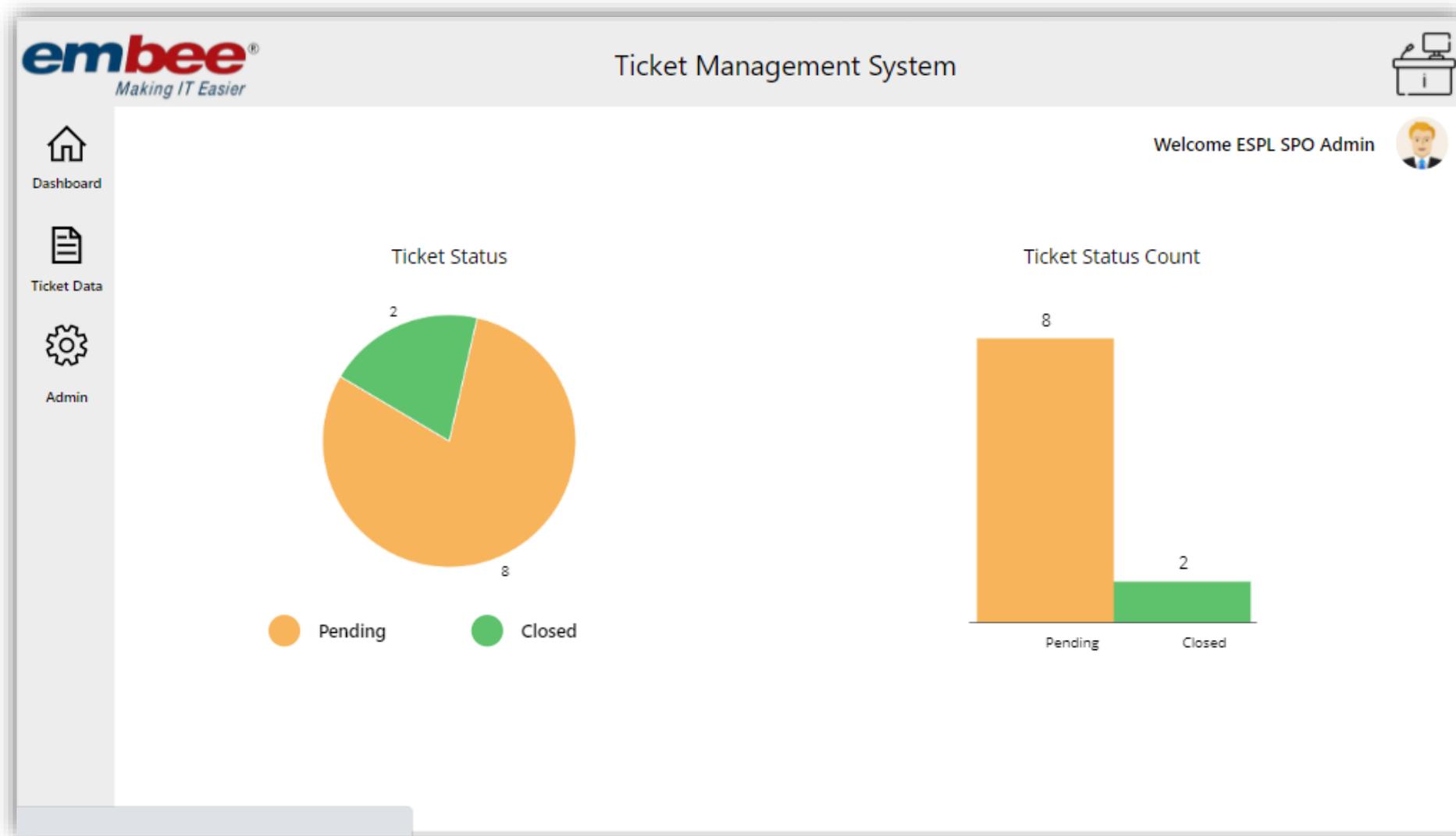


Timezones Vs User utilization





SERVICE INTELLIGENCE





Dashboard



Ticket Data



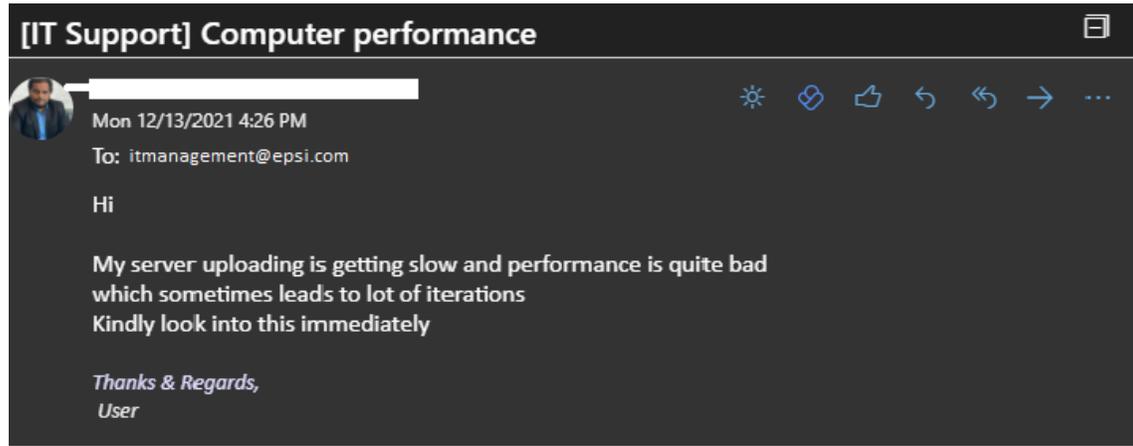
Admin

8
Pending

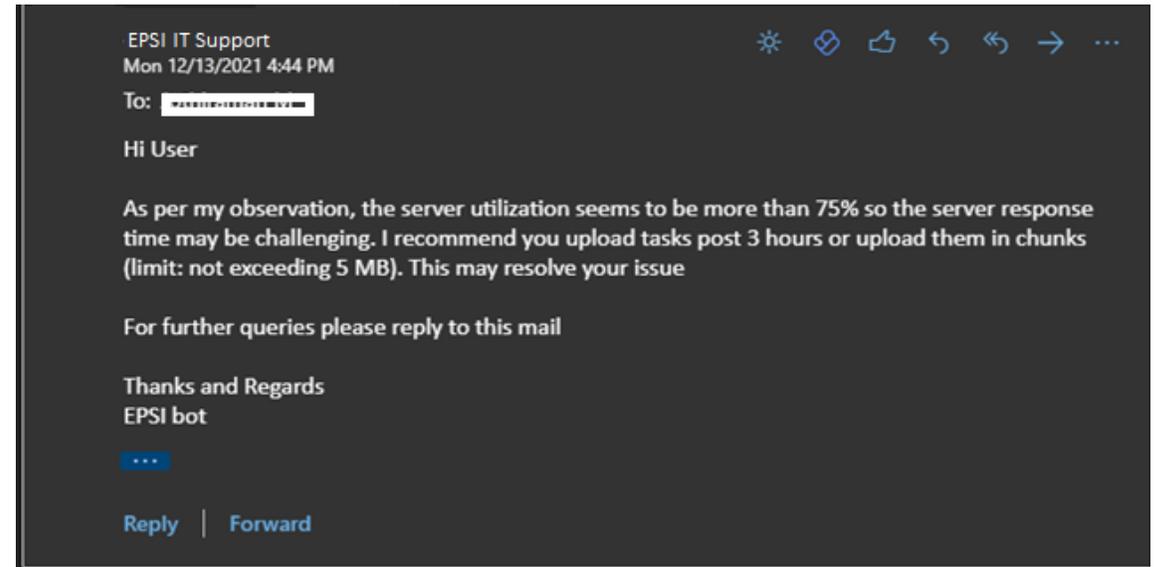
2
Closed

Ticket No	Raised on	Raised by	Issue Type	Status	View
Tick-0001	18-Aug-2021 13:36	ESPL SPO Admin	Desktop Issue	Pending	
Tick-0002	24-Aug-2021 11:03	ESPL SPO Admin	Internet Issue	Pending	
Tick-0003	24-Aug-2021 14:18	ESPL SPO Admin	Laptop equipment Issue	Pending	
Tick-0004	01-Sep-2021 11:46	ESPL SPO Admin	Laptop equipment Issue	Pending	
Tick-0005	03-Sep-2021 15:52	ESPL SPO Admin	Desktop Issue	Pending	
Tick-0006	23-Sep-2021 15:54	ESPL SPO Admin	Desktop Issue	Pending	
Tick-0007	29-Oct-2021 13:00	ESPL SPO Admin	Desktop Issue	Closed	
Tick-0008	29-Oct-2021 13:01	ESPL SPO Admin	Laptop equipment Issue	Closed	
Tick-0009	29-Oct-2021 15:35	ESPL SPO Admin	Laptop equipment Issue	Pending	

Ticket Request mail



Ticket Resolved mail



Json Extracted data using Key phrase extractor

```
{
  "documents": [
    {
      "redactedText": "Hi\n\n",
      "extracted issue": "My server uploading is getting slow and performance is quite bad\n",
      "addon": "which sometimes leads to lot of iterations\nKindly look into this immediately\n\nThanks & Regards.",
      "id": "id_11263",
      "entities": [],
      "warnings": []
    }
  ],
  "errors": [],
  "modelVersion": "2021-01-15"
}
```

Algorithm type: Supervised ML

Time elapsed : 18 mins



Precision – 93.2%

Score - 91.05 %

Recall – 89%

Accuracy – 95.7%

Leveraging the Power of Actionable Insight of Power BI

- 01 Azure overview
- 02 Azure Advisor
- 03 Security Alerts
- 04 Compute Details
- 05 Networking Details



Service type	Custom name	Region	Description
Virtual Machines	ADC Server	Central India	1 B2MS (2 vCPUs, 8 GB RAM) (1 year reserved), Windows (License included), OS Only; 1 managed disk – S10(128 GB), 100 transaction units
Azure Monitor	Azure Monitor	Central India	To monitor the parameters and develop the visualization in Power BI
Virtual Network	File Storage	Central India	File Storage, Transaction Optimised Performance Tier, General Purpose V2, LRS Redundancy, 5000 GB of Data at-rest, 5000 GB Snapshots
Azure Log Analytics Workspace	VPN Gateway	Central India	Basic VPN Gateway, 730 Hours
Azure Monitor	Log Analytics	Central India	15 VMs monitored, 2 GB logs per VM
Prediction	AI Buider	Central India	For performance maintenance of the servers and providing alerts on threshold limit
Machine Learning	ML Studio	Central India	For learning the performance of the machine
PowerApps	PowerApps	Central India	To manage the environment and provide an easy usage to the users
Power BI	PowerBI	Central India	Visualization of the Data

Project Summary

Summary

- To develop artificial intelligence approach for Server Monitoring approach
- To develop intelligent Ticketing app using Machine learning bot
- To enhance the server IT operations and monitoring

Objectives

- Helps to identify event patterns and generate metrics in IT Server
- monitors all generated events and develops predictive mechanism
- to pre-empt and resolve incidents
- leading to quicker resolution of tickets and reduced number of overall tickets.

Expected Outcome

EPSI model outcomes in a demo environment

Status

Demo deployment completed and preparing for the production **Within a month**



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with technology

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