



Spectrum Scale  
User Group

+

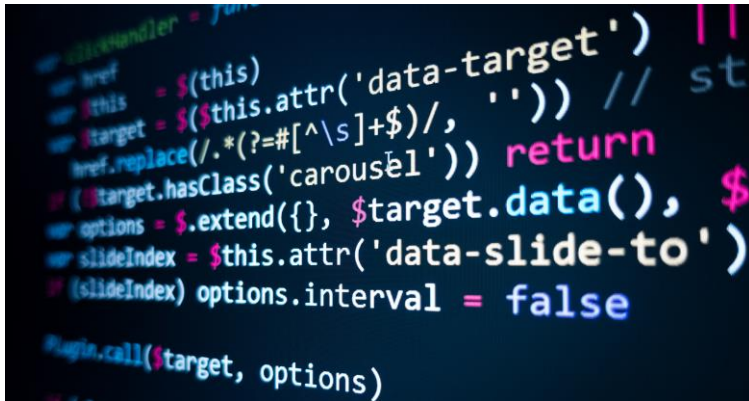


Mark III  
Systems



IBM Spectrum Scale

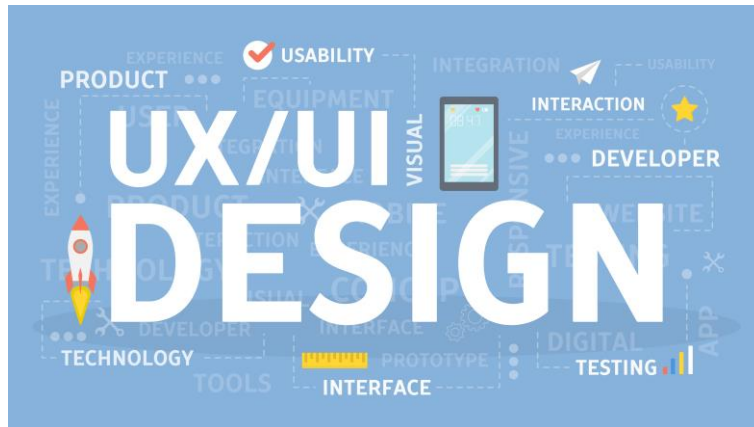
# New Skills for HPCaaS/AlaaS and Research



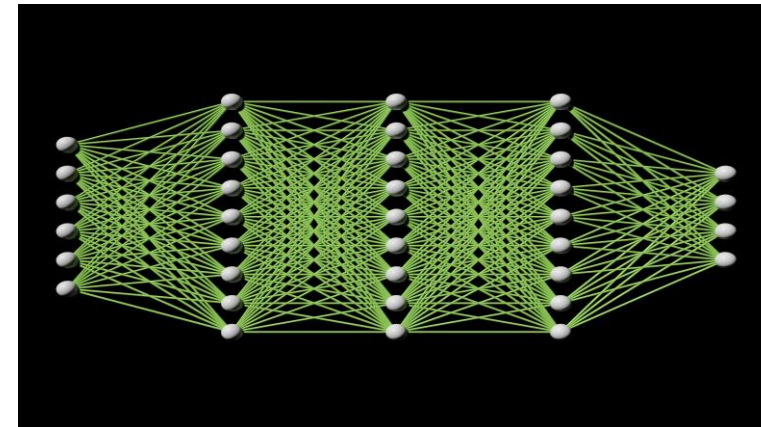
**Code**



**Automation**

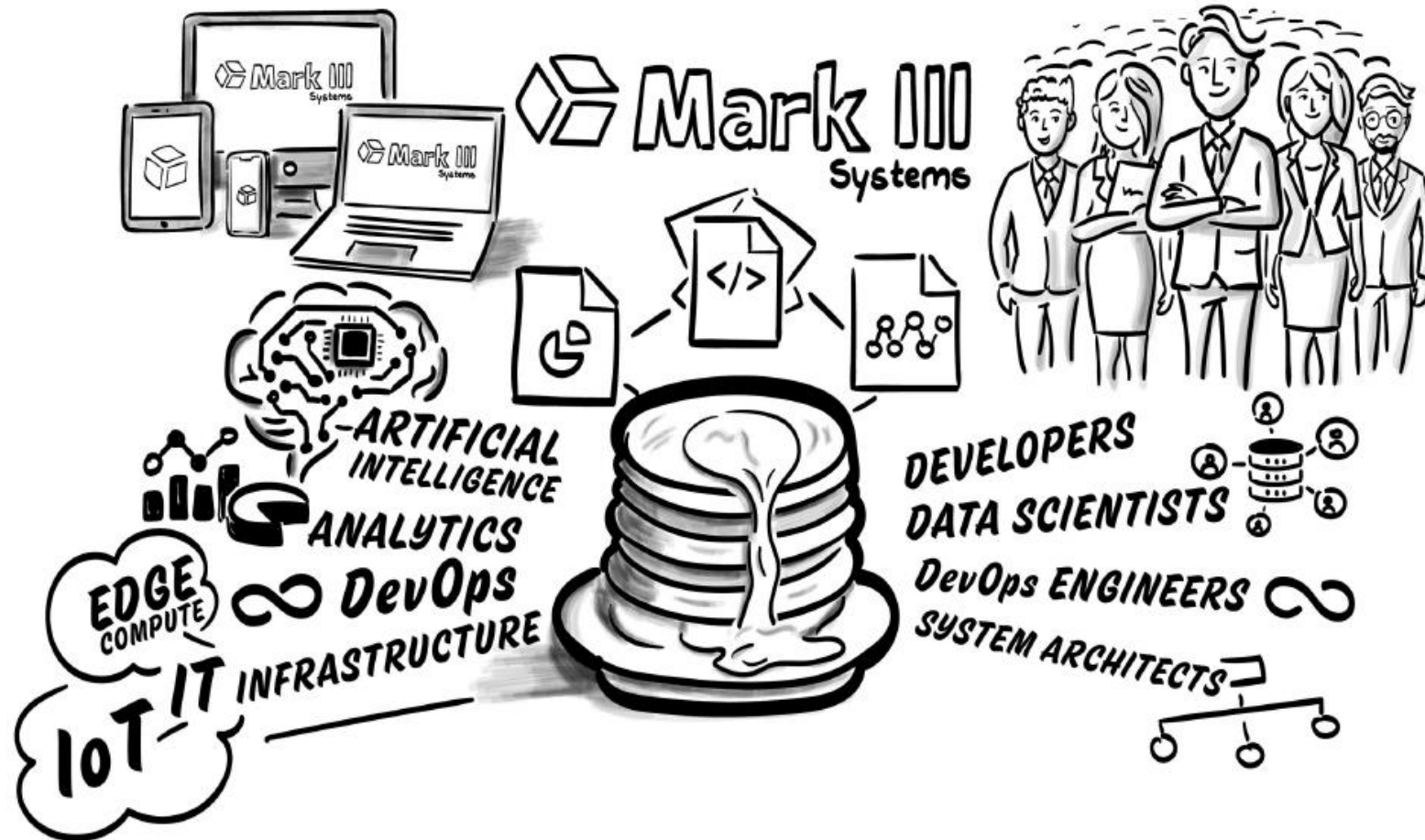


**Design**



**Understanding of data**

# The Enterprise Full Stack Partner



# HPCaaS, AlaaS, OpenSource Options



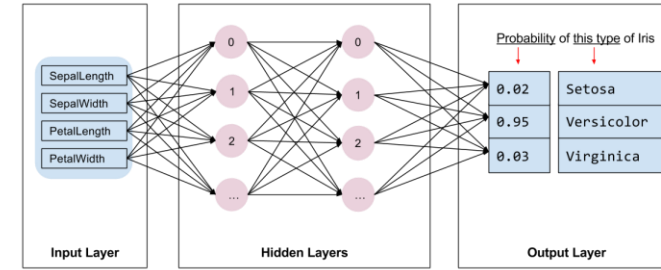
**10,000**

Different ways to do the same thing

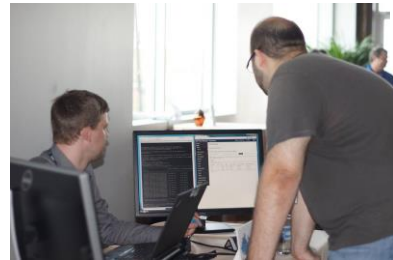
# Bring value to users in the right “language”



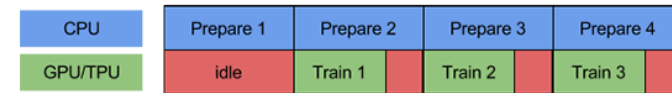
Data Scientists



Co-Building AI/ML/Analytics Models



DevOps



time

Automation & Pipelines



Devs



```

<code>
</code>

```

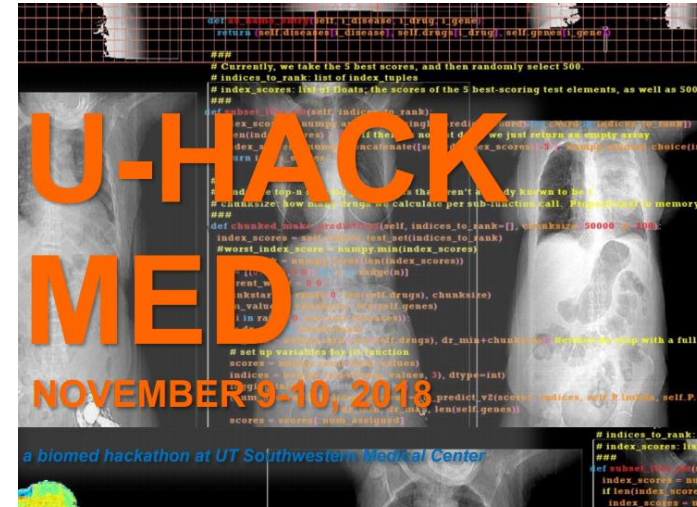
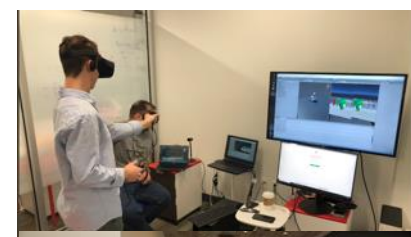
Code, Design, Community

# Mark III Systems – Innovate and Build with us

Hackathons

Builder Workshops

“Technology is only half the game”



# Impact when these skills combine

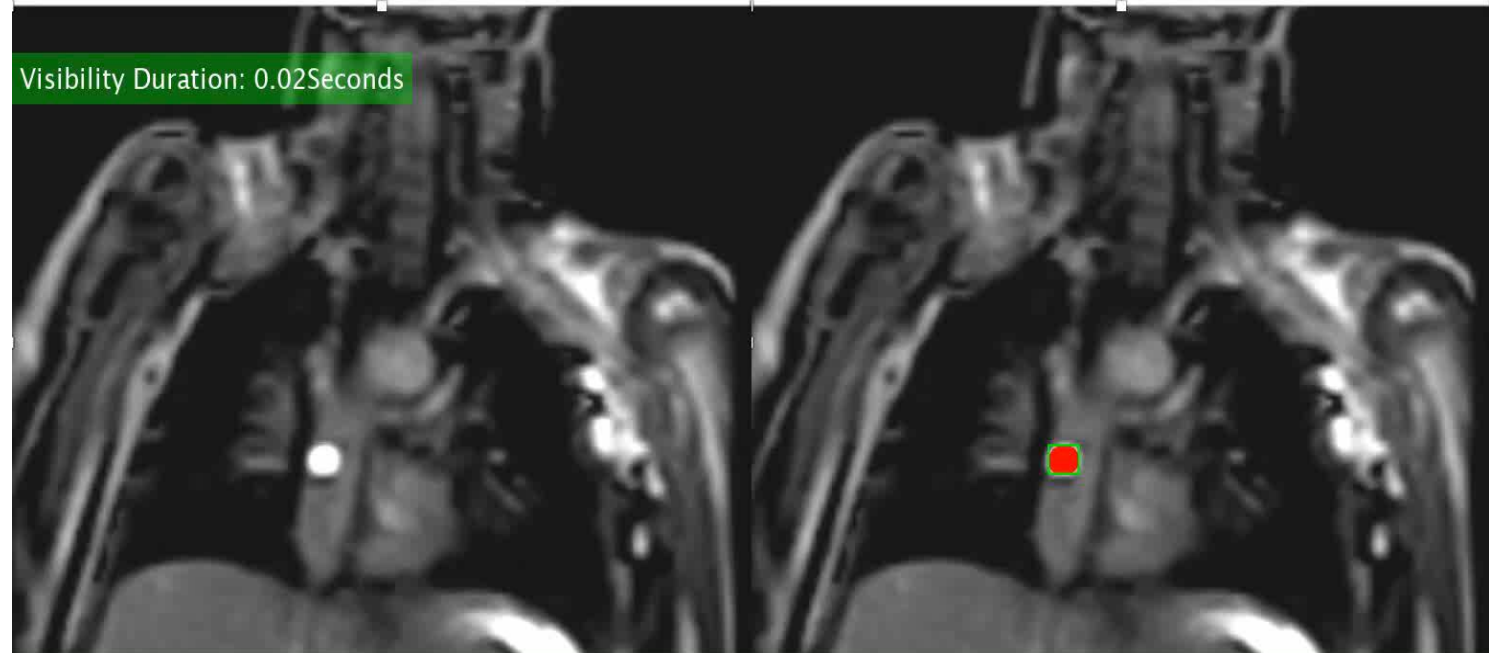
## Pediatric Cardiology – Catheter and MRI

### Current State:

- Patients spend 40+ mins under anesthesia
- Identify catheter travel
- Evaluate travel is as expected
- Evaluate irregularities in travel

### Desired End State – proven through Hackathon Nov 2019

- Anesthesia can conceivably be reduced to under 1 min from over 40mins on average – DRAMATIC reduction in brain development and other side effects
- Same functionality identified
- In addition to better patient outcomes – dramatically improved utilization of MRI equipment





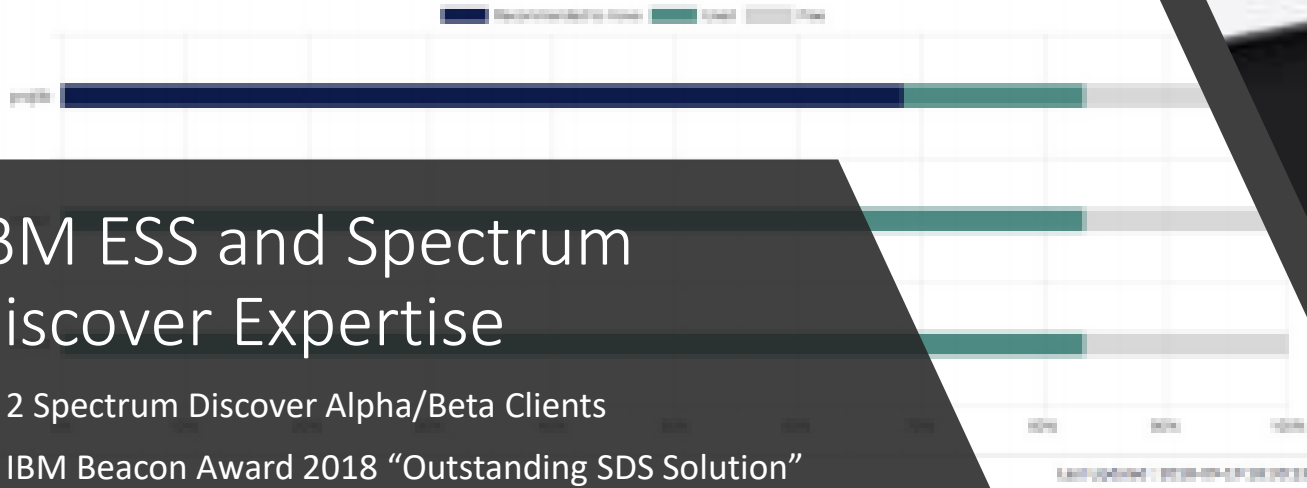
## IBM Beacon Awards

- 10 IBM Beacon Awards or Finalists in the past 9 years
- IBM Beacon Laureate Award (2018)
  - Only Laureate in history of IBM in Infrastructure category
  - 4 Laureates ever awarded in any category
- Beacon Awards in:
  - IBM Storage (3x Winner, 3x Finalist)
  - IBM Software-Defined Storage
  - IBM Cloud
  - IBM Digital Marketing
  - IBM Global Technology Services (Support)
  - IBM Major Markets





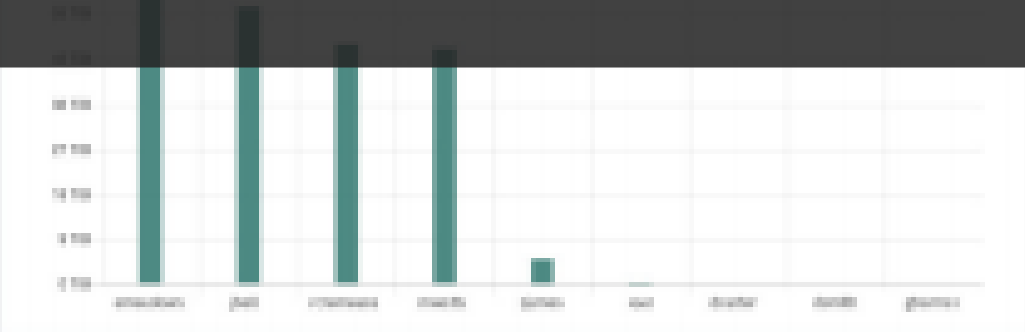
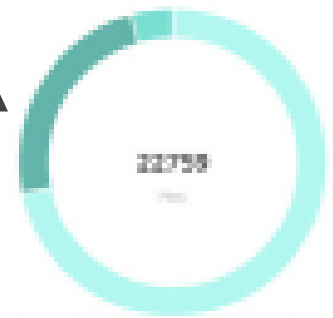
## Database Capacity



# IBM ESS and Spectrum Discover Expertise

- 2 Spectrum Discover Alpha/Beta Clients
- IBM Beacon Award 2018 “Outstanding SDS Solution”
  - IBM Spectrum Scale for Data Ocean for SaaS client
- IBM Beacon Finalist 2018 “Outstanding Storage Solution”
  - IBM ESS for Healthcare Research and secure implementation 6PB on two GL6 ESSs
- In house expertise for ESS connectivity, Discover, Protocol nodes, TCT, Scale

## Data by Project



# IBM Champions

## IBM Storage Champions

- Mark III Systems has 4 out of 44 total (~10% Worldwide)
- IBM Cloud Object Storage Redbook
  - 5 Authors are Mark III Systems “Full Stackers”



# Cloud Object Storage as a Service

## IBM Cloud Object Storage from Theory to Practice

Anil Patil  
Deepak Rangarao  
Harald Seipp  
Maciej Lasota  
Reginaldo Marcelo dos Santos  
Rob Markovic  
Simon Casey  
Stephen Bollers  
Vasfi Gucer

Andy Lin  
Casey Richardson  
Robert Rios  
Ryan VanAlstine  
Tim Medlin



# Helping to remove friction to foster innovation



# Automating workloads requires the same approach.

TEMPLATES

TEMPLATES 11

SEARCH  KEY

**Main create VM**

**Cross Platform**

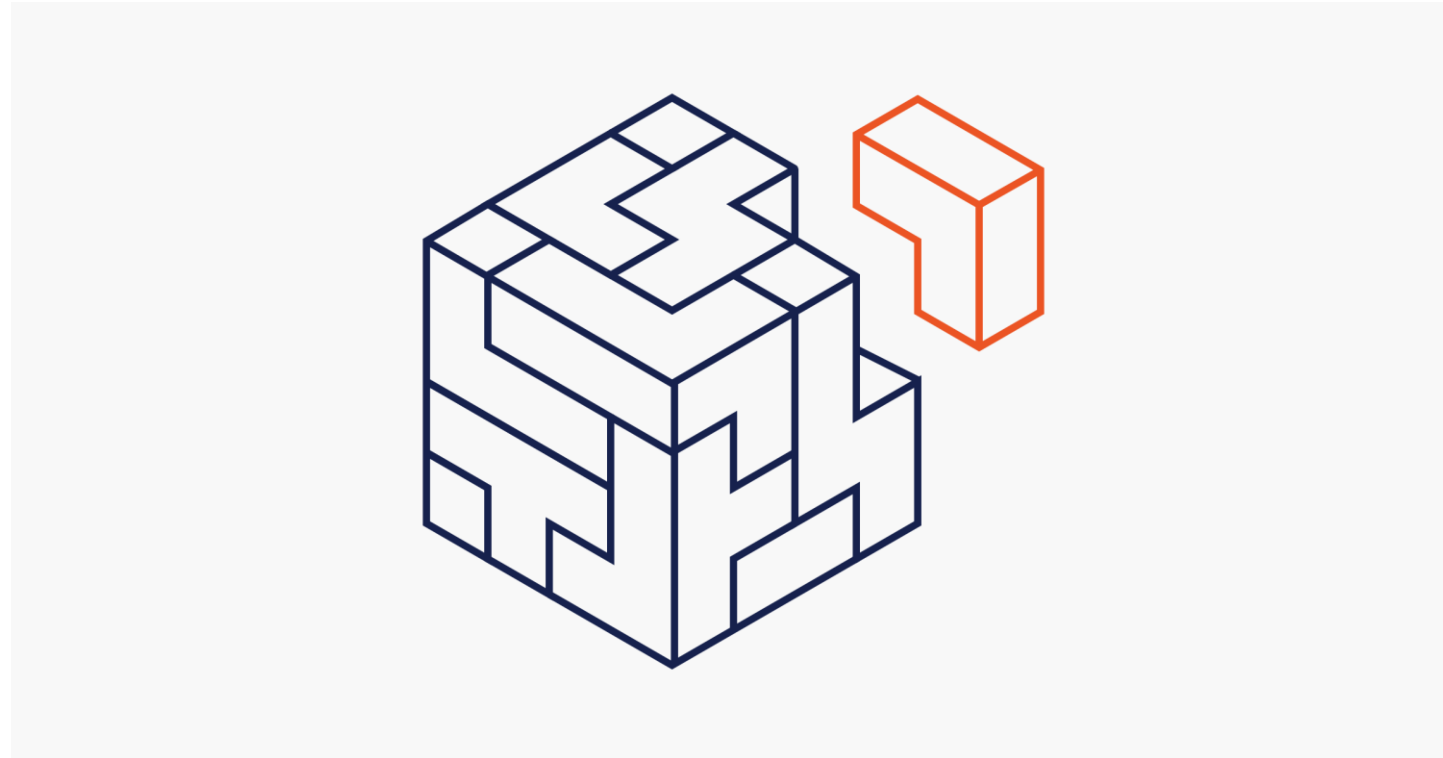
**Post deploy workflow**

**Use Roles to "stack" configs**

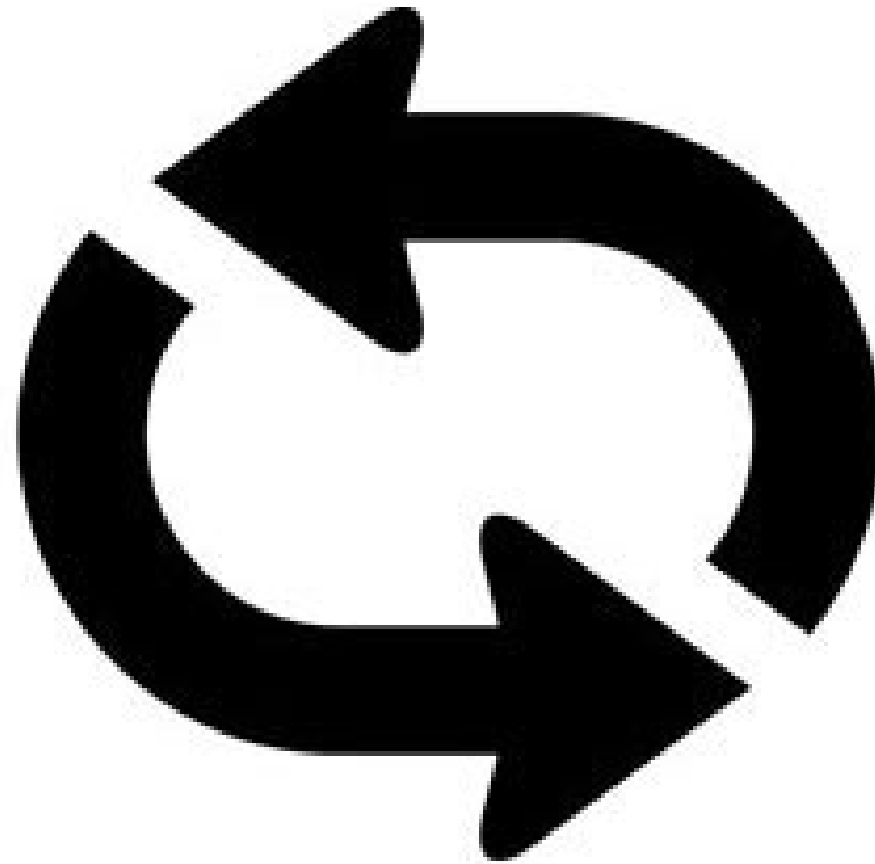
**Powershell DSC Config and Deployment**

|                                  |                   |  |
|----------------------------------|-------------------|--|
| Create Virtual Machine           | Job Template      |  |
| Install Apache                   | Job Template      |  |
| joins domain adds web and sql    | Workflow Template |  |
| Production Configuration         | Job Template      |  |
| template                         | Workflow Template |  |
| Win.Run - DSC Feature Web-Server | Job Template      |  |
| Win.Run - DSC Install SQL 2017   | Job Template      |  |
| Win.Run - Extend Disks           | Job Template      |  |
| Win.Run - Hello World            | Job Template      |  |
| Win.Run - Join Lab Domain        | Job Template      |  |
| Win.Run - Join Lab Domain - OLD  | Job Template      |  |

# Iterate on a little (modular) task at a time.



# Feedback loop



# More: Automated SQL install on the VM

```
terraform_ansible_tower_demo > playbooks > ! dsc-SQLInstall.yml > [ tasks > {} ] win_dsc > #Action
13 - ServerManager
14 - dbatools
15 - xNetworking
16
17 - name: Win Get the SQL Media
18   win_get_url:
19     url: "http://msisilon200/SQLConfigurations.zip"
20     dest: "c:\\setup\\SQLConfigurations.zip"
21
22 - name: Recursively decompress the SQL Install Media
23   win_unzip:
24     src: "C:\\setup\\SQLConfigurations.zip"
25     dest: "C:\\setup\\"
26     delete_archive: yes
27
28 - name: Install SQL Server
29   win_dsc:
30     resource_name: SQLSetup
31     Action: Install
32     UpdateEnabled: False
33     SourcePath: "c:\\setup\\SQLConfigurations\\SQL2017\\"
34     InstanceName: "MSSQLSERVER"
35     InstallSharedDir: "C:\\Program Files\\Microsoft SQL Server"
36     InstallSharedWowDir: "C:\\Program Files (x86)\\Microsoft SQL Server"
37     InstanceDir: "C:\\Program Files\\Microsoft SQL Server"
38     SQLUserDBDir: "G:\\MSSQL\\Data"
39     SQLUserDBLogDir: "L:\\MSSQL\\Logs"
40     SQLTempDBDir: "T:\\MSSQL\\TempDB"
41     SQLTempDBLogDir: "L:\\MSSQL\\TempLog"
42     Features: "SQLENGINE,FULLTEXT"
43     SQLCollation: "SQL_Latin1_General_CP1_CI_AS"
44     BrowserSvcStartupType: "Automatic"
45     SQLBackupDir: "G:\\MSSQL\\Backup"
46     AgtSvcStartupType: "Automatic"
47     SQLSysAdminAccounts: "BUILTIN\\Administrators"
48     PsDscRunAsCredential_username: '{{ ansible_user }}'
49     PsDscRunAsCredential_password: '{{ ansible_password }}'
50     no_log: false
51
```

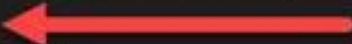
Full SQL install pulling media from http store, decompress and perform install based on DSC defined parameters written in YAML



# MORE: Integrated into ticketing system (via API)

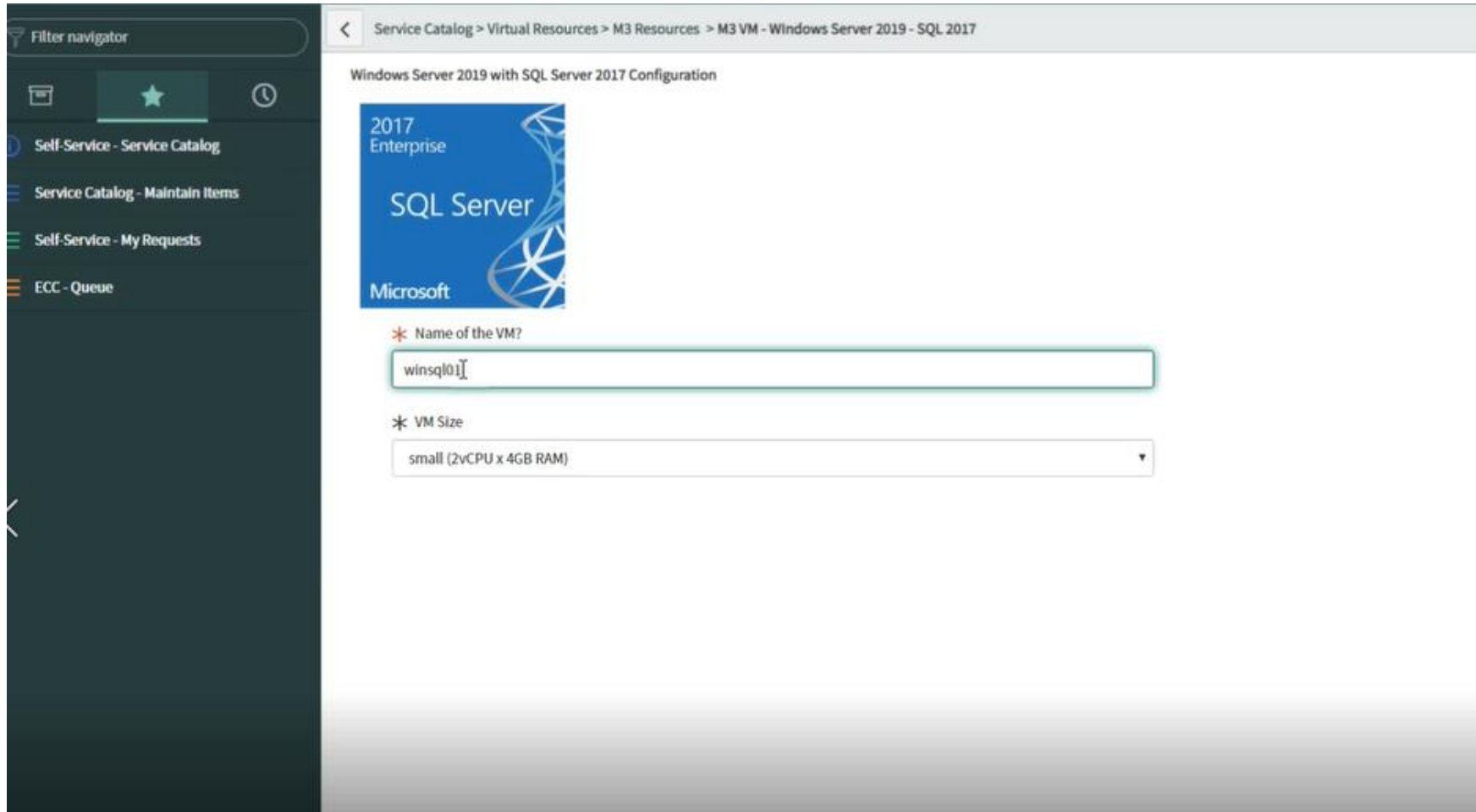
```
terraform_ansible_tower_demo > playbooks > / tsk.snow.update_request.yml > ...
Bryan McClellan, a month ago | 1 author (Bryan McClellan)
--- Bryan McClellan, a month ago - attempting snow ticket update
1 --- Bryan McClellan, a month ago - attempting snow ticket update
2 #requires: pysnow
3 ##
4 - include_tasks: ./tsk.snow.get_request.yml
5   vars:
6     snow_number: "{{ snow_number_task }}"
7     register: get_req
8
M   - name: Debug get_req
M   debug:
M   msg: "{{ get_req.record.stage }}"
M
M   - name: include vars
M   include_vars: "/terraform_demo/vars/snow_vars.yml"
9
10
11
12
13
14
15
16 - name: Update record
17   snow_record:
18     table: sc_request
19     state: present
20     username: "{{ snow_user }}"
21     password: "{{ snow_pass }}"
22     instance: "{{ snow_instance }}"
23     number: "{{ snow_number_task }}"
24     data:
25       comments: "{{ snow_comment }}"
26       stage: "{{ snow_stage | default(get_req.record.stage) }}"
27     register: update_req
28
29 - name: Lets see it
30   debug:
31     msg: "{{ update_req }}"
```

Integrate external system into ticketing systems using APIs



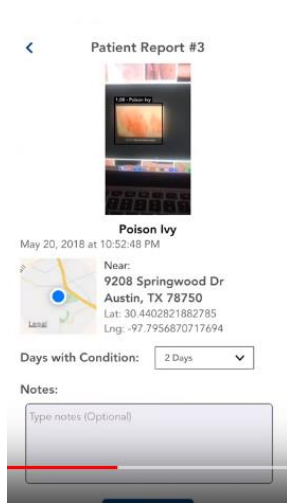


# One possible (self-service) end of the rainbow...



The screenshot shows a self-service portal interface. On the left is a dark sidebar with a 'Filter navigator' at the top and a menu containing: 'Self-Service - Service Catalog' (highlighted with a star), 'Service Catalog - Maintain Items', 'Self-Service - My Requests', and 'ECC - Queue'. The main content area has a breadcrumb trail: 'Service Catalog > Virtual Resources > M3 Resources > M3 VM - Windows Server 2019 - SQL 2017'. Below the breadcrumb is the title 'Windows Server 2019 with SQL Server 2017 Configuration'. A Microsoft logo and '2017 Enterprise SQL Server' branding are displayed. Two required fields are visible: 'Name of the VM?' with a text input containing 'winsql01' and 'VM Size' with a dropdown menu showing 'small (2vCPU x 4GB RAM)'.

# Low Friction Starting points

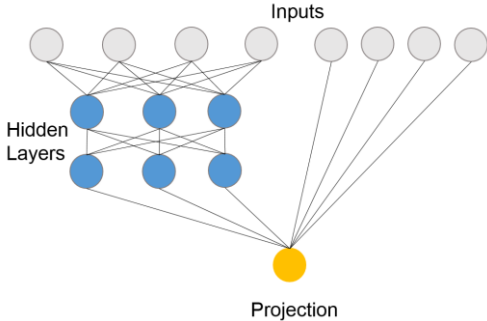


Real-time Vision AI  
"Tricorder"



Cognitive Drone  
"IoT & Video Analytics"

Accelerated Analytics  
with AI for Healthcare  
"Better Predictions"



Mark III Health Bot

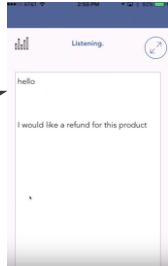


Computer Vision for  
Healthcare  
"Medicine Recognition AI"



Digital Signage AI  
"Minority Report Board"

Cognitive Audio Platform  
for Speech & Alerts  
"Cognitive Call Center"



# How to Engage – Mark III Systems

- Chris Bogan, VP of Sales, [bogan@markiiisys.com](mailto:bogan@markiiisys.com)
- Holly Newman, Business Development & Alliances, [holly.newman@markiiisys.com](mailto:holly.newman@markiiisys.com)