

Hakuna Matata for Foundations

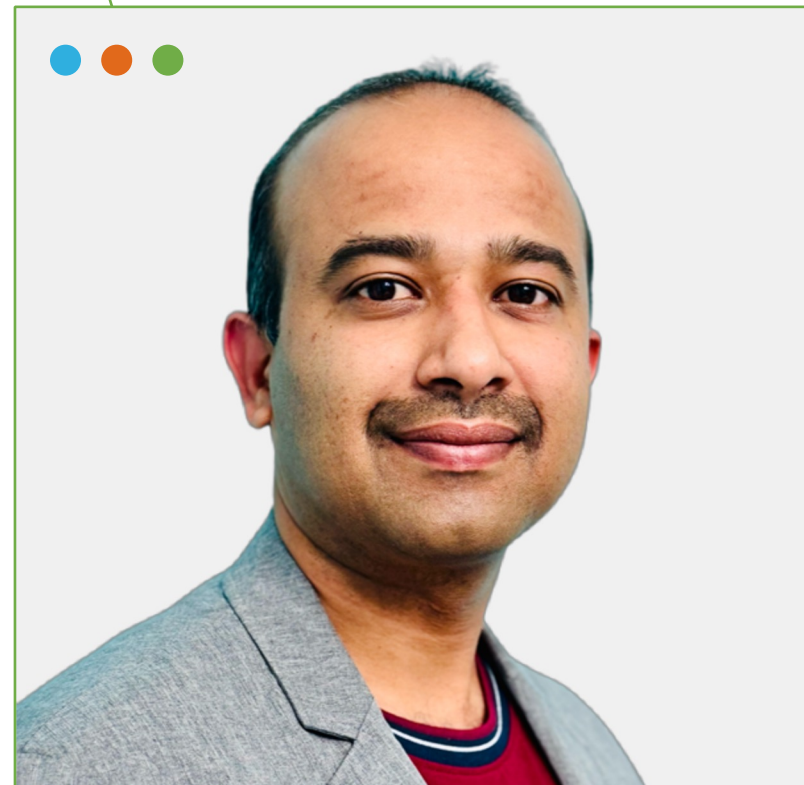
How our infrastructure organization is scaling adoption





HELLO! I'm ...
Naresh Pillarikuppam

**I am the Manager of Platform
Engineering team at Broadcom.**





HELLO! I'm ...
Jyotsna Chatradhi
Sr. Manager UI Engineering



Mainframer Life on Shared Environment

Disruptions

Lack of isolation and inter-dependency leads into disruptions for broader group upon any events

Data Transfer

Nightmare in moving files from various destination environments

Security

Lack of elevated permissions will lead into involving Security Team

Incidents - SAD IPL

Unknown error in application will lead into System wide incident → SAD IPL

Analytics

On a shared environment, it will be hard to measure the impact/performance of the application

Environment

Provisioning any required infrastructure shall takes its own time through tickets. Changes has to go through Change Orders



AS-IS

Start



1: Feature development



2: Environment and Path Forward



3: Execution and impact

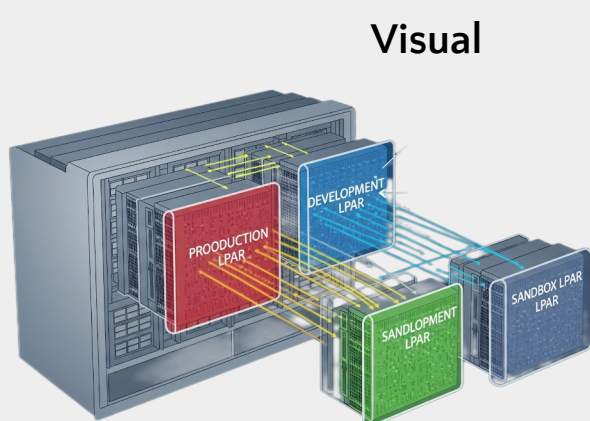


4: System-wide incident



5: SAD IPL and Impact

Finish



Persona: Mainframe Developer



GOALS:

Deliver quality code in
time and have
sufficient app
understanding



Scenario Frequency



Scenario Difficulty



Feature Development and Testing

01

Code Changes



Validation



System Level
Testing

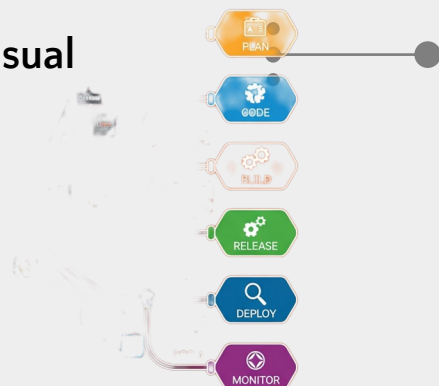


SHARED LPAR





Visual



Persona: Mainframe Developer



GOALS:

Deliver quality code in time and have sufficient app understanding

Scenario Frequency



Scenario Difficulty



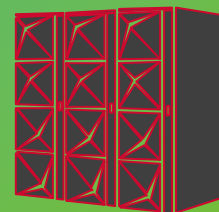
Environment and Path Forward

02

DB2 Teams



SHARED LPAR



DevOps Teams



Security Teams

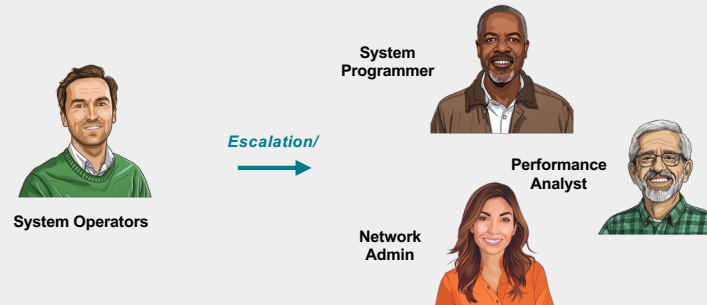


Visual

```
ABEND:30000  
S00MBANPABHUNA  
STERT:4/19  
ABEND:25/10  
S00MBAGOEMCJ  
ABEND:4600  
ABEND:13850  
STERT:32/50  
STERT:22000  
ABEND:15900  
IBSK:077/23  
ERERR:18000  
ETERR:20010  
STERT:22500  
ERECOST/CO  
/1/9  
ABEND:18000  
ABEND:14904  
ABEND:14900  
BR00  
ABEND:15955  
SBURT:14900  
ABEND:14950  
SERT:42500  
75400  
ERERR:30000  
STERT:26500  
STURT:14900  
IBSK:177/11  
SERT:162400  
SERT:17/12
```

SYSTEM ABEND S0C4
SYSTEM ABEND S0C4
I/O ERRINGE
MONAN 7/1 SGOY
7MFA DIISK URNIT
I/O ERROR DISK UNIT 3390
QGBFM G4 3390
JOB QUEUE FULL
/YSTERA /ABBROR
/ROGRNCR
JOB QUEUE FULL
MEMOY ALLOCATION FAILED
MAILP
MEMORG ALLOCATION FAILED
MEMOY ALLOCATION FAIED
SYSTEM S0CL/G4
SYPER IRB/A
JOCP ABEND

Persona: Multiple teams



Scenario Frequency

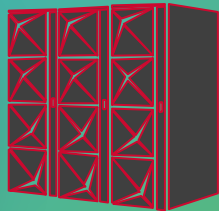


Scenario Difficulty



Execution and Impact

03



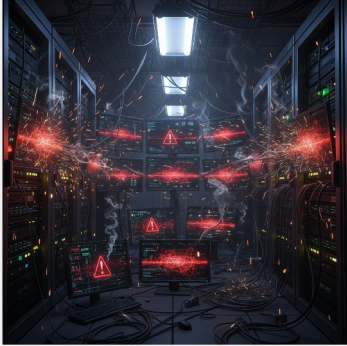
JCL - Abend State



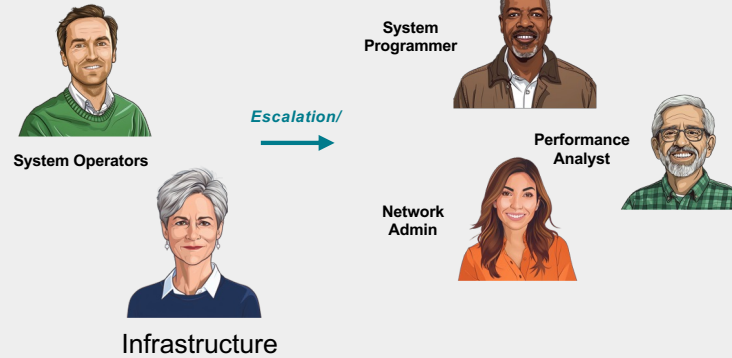
Impacted failures



Visual



Persona: Multiple teams + Infrastructure organization



Scenario Frequency

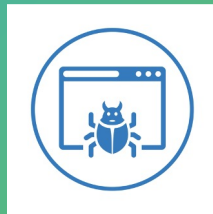


Scenario Difficulty



System-Wide Incident

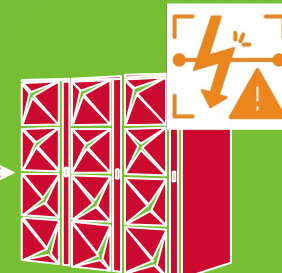
04



Incident

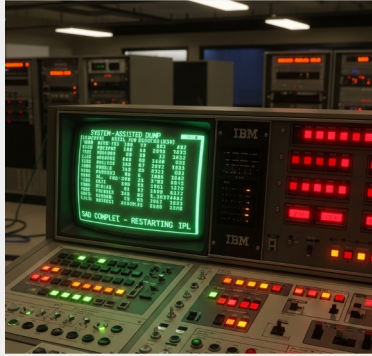


Recovery by Infra team



Still Unstable

Visual



Persona: Infrastructure team



Infrastructure

System
Programmer



Performance
Analyst



Scenario Frequency



Scenario Difficulty

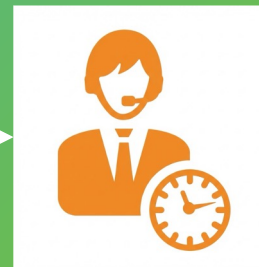


SAD IPL and Impact

05



Troubleshooting



Coordination Calls



TO-BE

Start



1: Feature development



2: Environment and Path Forward



3: Execution and impact



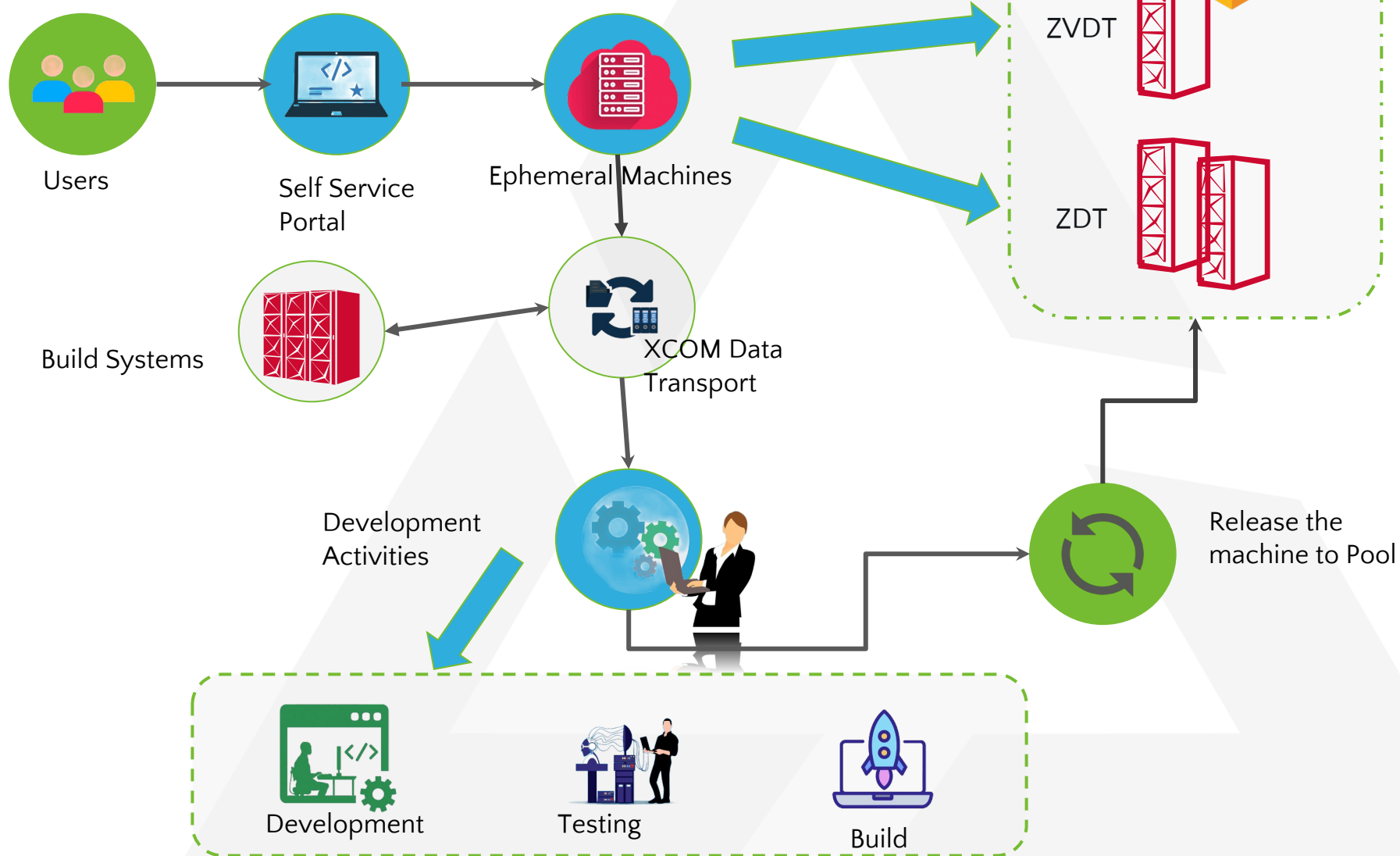
4: System-wide incident



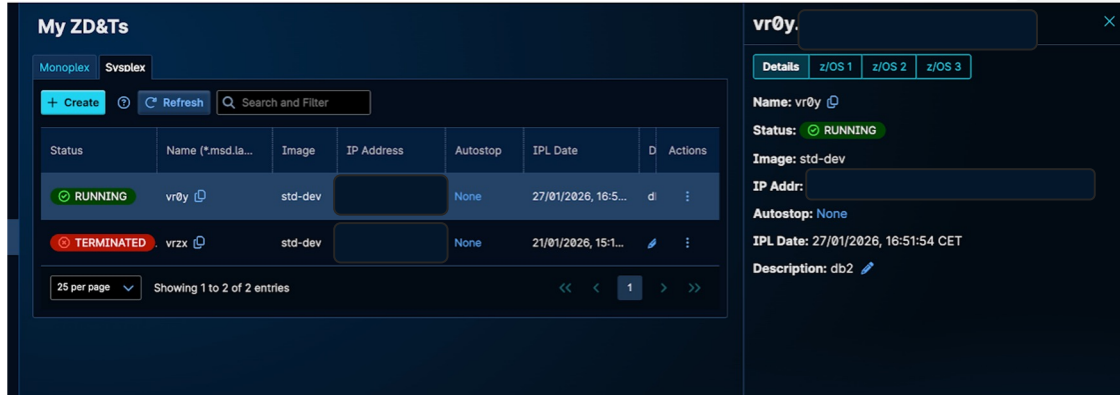
5: NO SAD IPL or Entire system Impact

Finish

Solution



Key Features and Benefits



Blast Radius Isolation

Insert your desired text here.



Elimination of SAD IPLs

Ability to delete and redeploy in mins



Zero State Testing

“clean” version controlled environment



Managed Data Movement

Maintaining record formats with XCOM

Resource Required



Cloud compute costs, storage costs and network bandwidth.



A golden state image needs to be maintained up to date with packages.

Potential Challenges

1

Data Gravity with Culture Shift

- ➔ Slow Massive dataset movements
- ➔ User unfamiliarity

Data Masking and Broadcom XCOM to send minimal data and provide self service portal

2

Licensing and Cost

- ➔ Multiple Instance running for 24X7
- ➔ No 1 to 1 Mapping between shared LPAR and instance

Use Infrastructure as code and Implement auto teardown policies

Our Success Story

- ➔ Reduction of System Wide Incident
- ➔ Improvement in Developer Productivity
- ➔ Developer time in getting the resources in less than 1 hr

Our Proposed Business Solutions

- + **Self-Service Ecosystem**
The transformation from a single, high-risk shared LPAR to a self-service ecosystem of ephemeral instances
- + **Broadcom XCOM**
For managed data transport and a centralized self-service portal

Q&A

Do you have any
questions?



Naresh Pillarikuppam



Jyotsna Chatradhi

Get In Touch



NARESH PILLARIKUPPAM
Engineering Manager at Broadcom



Jyotsna Chatradhi
Sr. Engineering Manager | 5 patents published |
100+ patent citations | Professional Speaker | UNT...



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