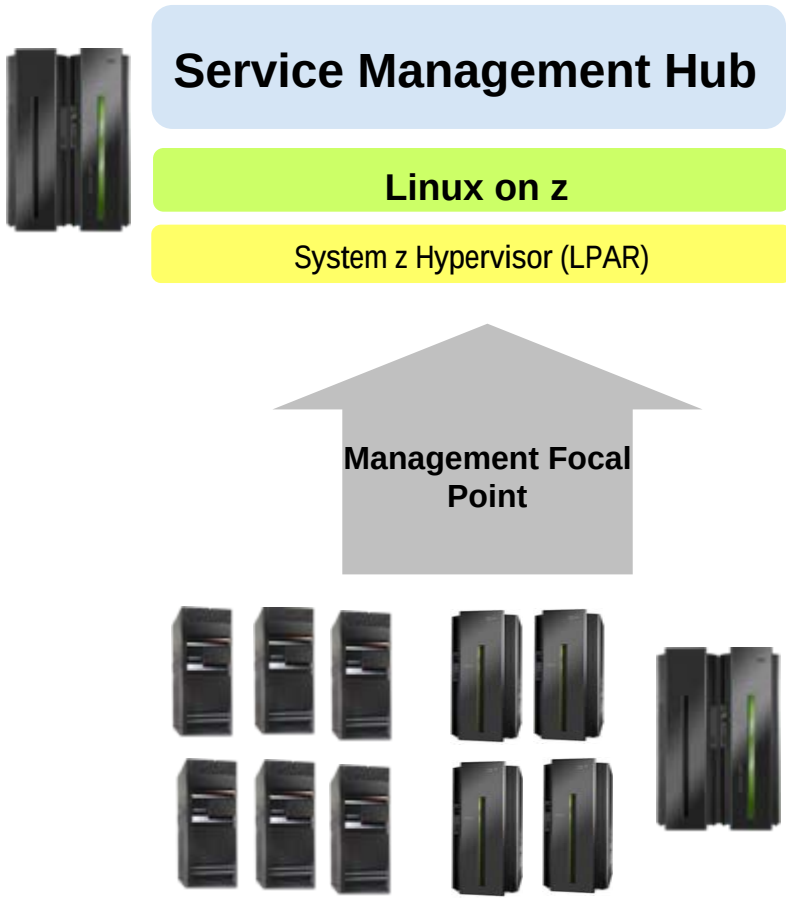
Extending Your Mainframe For More Business Value

Extend IT Service Management

Mainframe as a Service Management Hub

- Consolidate management on a mainframe
  - Hub on Linux on z
  - z/OS supported as a managed system
- Mainframe is a natural platform for a service management hub
  - Performance, scalability, reliability, inherent security, cost efficiencies



Managing the Data Center from a Mainframe

How can we manage our data center from the mainframe?

Data Center Manager

Structured management is essential for the data center. IBM has a comprehensive solution.

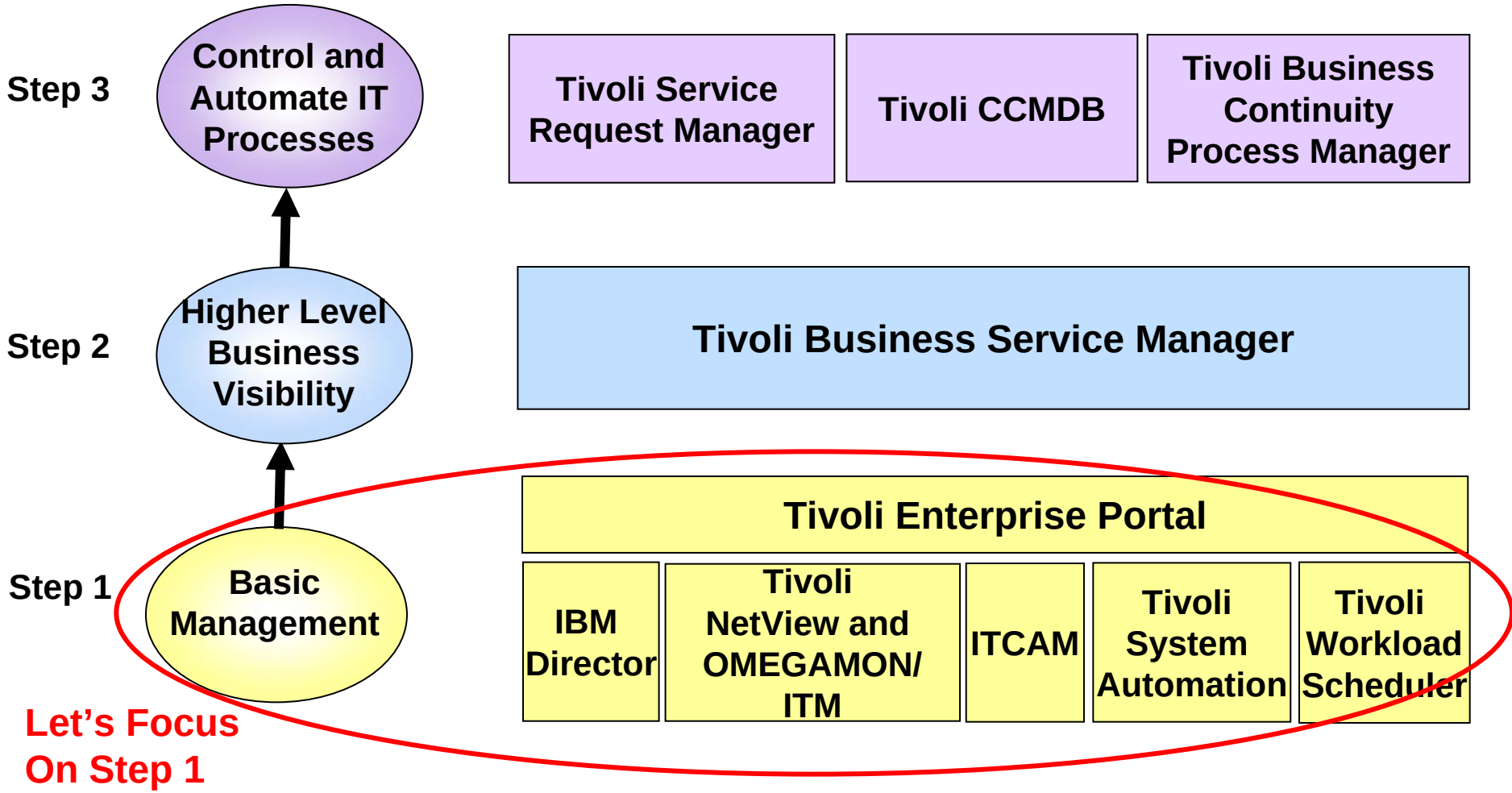
IBM

Data Centers Need Structured Management to Control Costs and Improve Service Levels

Visibility	Control	Automation
See issues in business context	Standardize IT processes to resolve issues	Automate repeating tasks to simplify
Respond faster and make better decisions	*Improve quality and reduce mistakes*	*Lower costs and build agility*

Solution: *IBM Tivoli Service Management Center for System z*

A Step by Step Approach to Implementing Tivoli Service Management Center for System z



Visibility… Control… Automation

Basic Management and Visibility

Tivoli Enterprise Portal (TEP)

Single interface for management →

Runs on Linux on System z

Retrieval, manipulation and analysis of data →

Tivoli Enterprise Portal Server

Runs on Linux on System z

Collect and correlate monitoring data →

Tivoli Enterprise Monitoring Server

Runs on Linux on System z and z/OS

Events

Intelligent monitoring agents on systems send events →

IBM Director – Hardware Management

- Base platform management included with purchase of IBM Systems
- Provides common management tools for System z, Power Systems, System x, and BladeCenter
- View and track hardware configurations of systems
- Monitor the usage and performance of critical components such as processors, disks and memory
- IBM Director Extensions for System z include:
  - z/VM Center
    - Manage virtual Linux server mainframe environment
    - Provides functions to deploy new z/VM virtual Linux systems easily using templates
  - Active Energy Manager
    - Measures, monitors and manages the energy components built into IBM systems
- Feeds events to IBM Tivoli Enterprise Portal

Tivoli NetView and Tivoli OMEGAMON XE -- Monitor Mainframe Resources

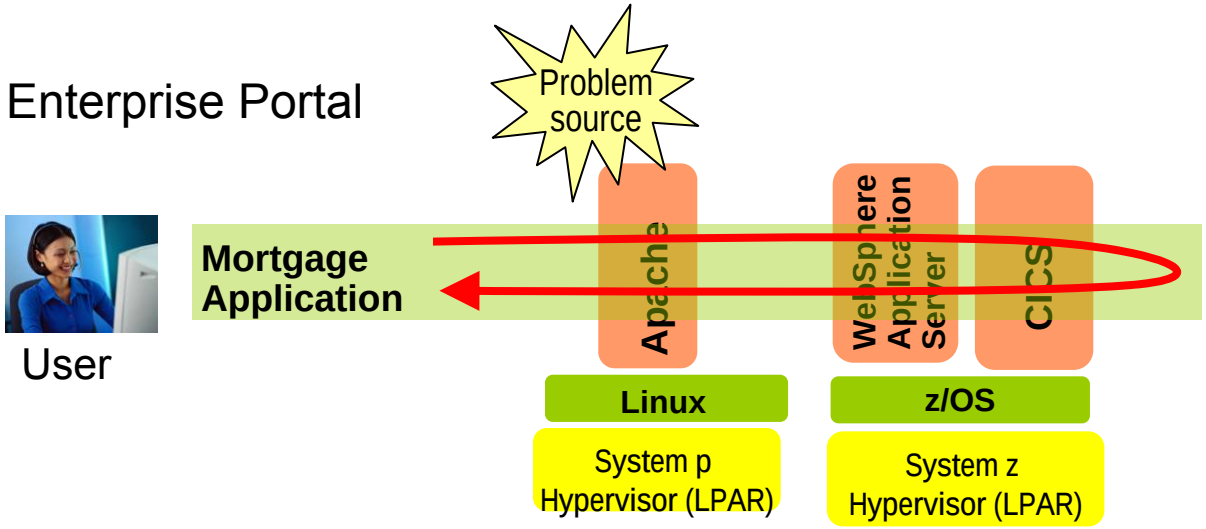
- Tivoli NetView and Tivoli OMEGAMON XE agents for mainframe servers
  - *NetView on z/OS* – monitor and control TCP/IP and SNA networks to help maintain high availability
  - *OMEGAMON XE on z/OS* -- monitor key resources such as CPU, LPARs, I/O, network, enqueue, paging, zIIP, zAAP, Cryptoprocessors
  - *OMEGAMON XE on z/VM and Linux* -- monitor z/VM and Linux usage of resources such as CPU, network, storage
  - *OMEGAMON XE for Mainframe Networks* – collect data and diagnose network performance issues across z/OS systems
  - *OMEGAMON XE for DB2 PM/PE on z/OS* -- monitor performance of DB2 in a z/OS environment
  - *OMEGAMON XE for IMS on z/OS* -- manage IMS systems
  - *OMEGMAON XE for CICS on z/OS* -- manage CICS systems

Tivoli Monitoring -- Monitor Distributed Resources

- Tivoli Monitoring agents for distributed servers
  - *Monitoring* (base) -- monitor system resources such as CPU, I/O, network
  - *Monitoring for Database* -- monitor availability and performance of distributed databases such as DB2, Oracle, Microsoft SQL Server
  - *Monitoring for Business Integration* -- manage IBM WebSphere MQ, WebSphere MQ Integrator, WebSphere MQ Workflow and IBM WebSphere Interchange Server
  - *Monitoring for Applications* -- monitor SAP
  - *Monitoring for Messaging and Collaboration* -- monitor Lotus Domino

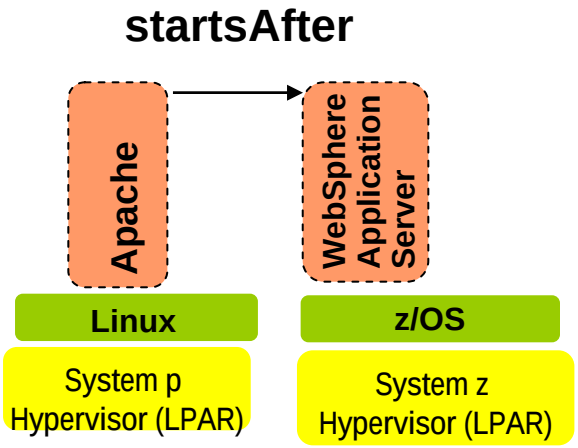
Tivoli Composite Application Manager (ITCAM) -- End-to-End Transaction and SOA Management

- Track transaction performance end-to-end across multiple physical and/or virtual systems to quickly isolate bottlenecks
  - Isolate the source of the performance problem across web servers, WebSphere and WebLogic application servers, CICS, IMS and DB2 subsystems, as well as ERP environments
- Monitors and performs simple control of message traffic between Web services in the SOA environment
  - Can filter messages based on user-configurable criteria
- Sends events to Tivoli Enterprise Portal



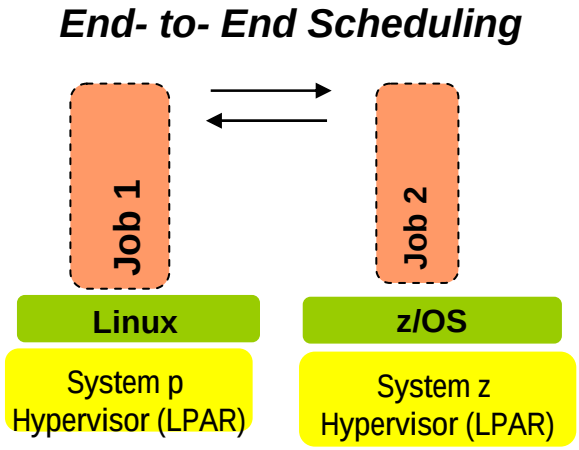
Tivoli System Automation (TSA) – Automate System Operations

- Automate operations on hardware, I/O and applications
- No Scripts, policy-based automation
- Can manage relationship between resources and grouping of resources to automate at application level
- Includes out-of-the-box automation modules for middleware such as IMS, CICS, DB2, mySAP, WebSphere
- Can enable end-to-end application startup and shutdown across System z and distributed platforms
- Sends events to Tivoli Enterprise Portal



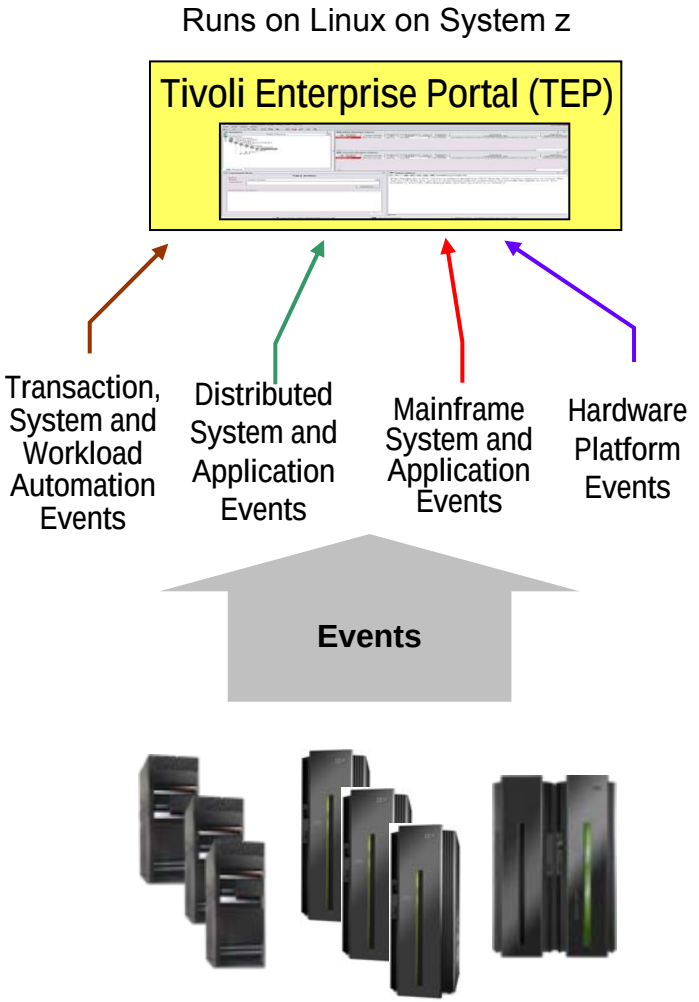
Tivoli Workload Scheduler (TWS) -- Batch Workload Automation

- Enables planning for hundreds of thousands of jobs, resolves interdependencies, launches and tracks each job
- Powerful calendar-based and event-based scheduling capabilities
- Automatic recovery of jobs
- Workload Manager (WLM) integration to optimize resource utilization and favor late critical jobs
- Provides a single point of control for System z workloads or enterprise-wide workloads in end-to-end environments
- Sends events to Tivoli Enterprise Portal



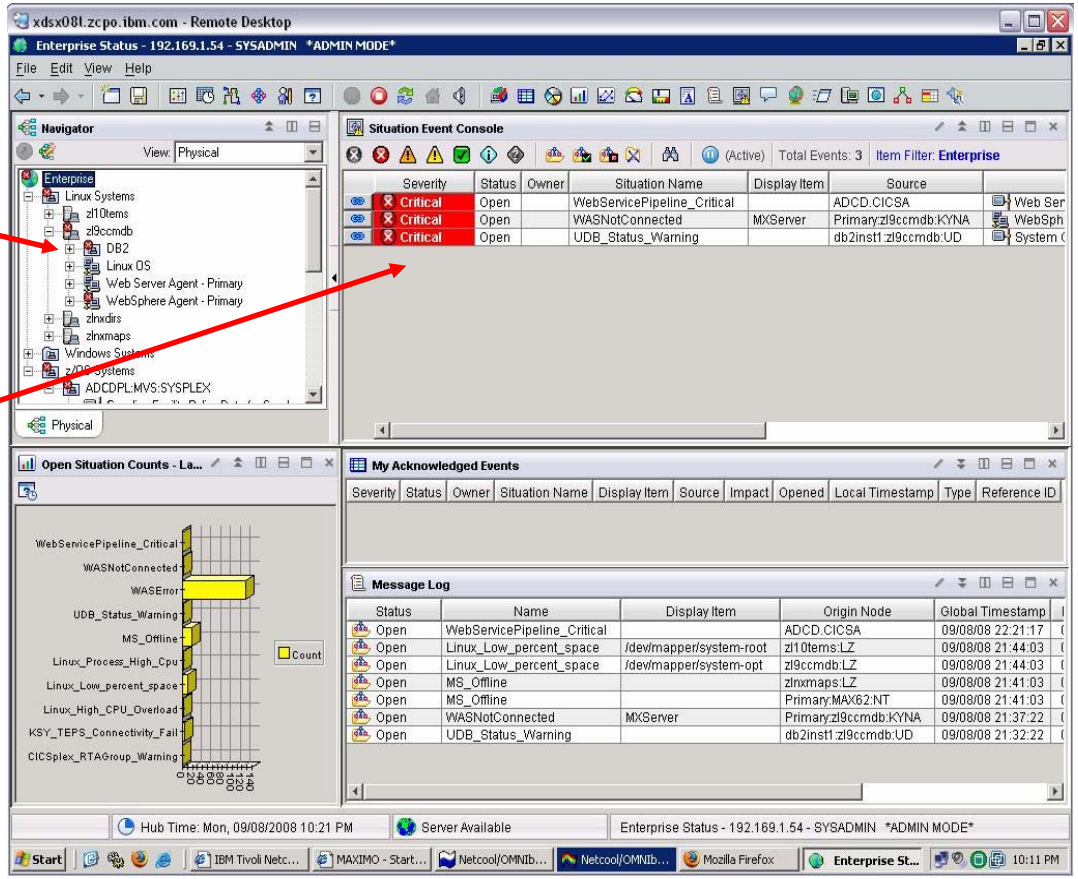
Tivoli Enterprise Portal (TEP) – A Common Monitoring Dashboard on System z

- Resource status/health from various event sources:
  - Hardware platform events from **IBM Director**
  - Mainframe events from **Tivoli OMEGAMON**
  - Distributed events from **Tivoli Monitoring (ITM)**
  - Transaction events from **Tivoli Composite Application Manager (ITCAM)**
  - System automation events from **Tivoli System Automation (TSA)**
  - Batch workload events from **Tivoli Workload Scheduler (TWS)**
  - Events from 3rd party monitors
- Detect incidents with *situations*
  - Out-of-the-box supplied *situations* include combination of metrics and thresholds
  - Built-in situation editor allows to customize
- *Expert advice* helps obtain detailed explanation and recommendation for resolution
- *Take action* to automatically resolve recurring problems with existing or customized scripts



DEMO: Tivoli Enterprise Portal (TEP)

- Monitor resources end-to-end with workspaces
- *Situations* triggered by problems, for example:
  - CICS application not responding
  - DB2 application has issues



A Dynamic Role-based Portal for End-to-End Monitoring!

Prioritize IT Issues with Business Visibility

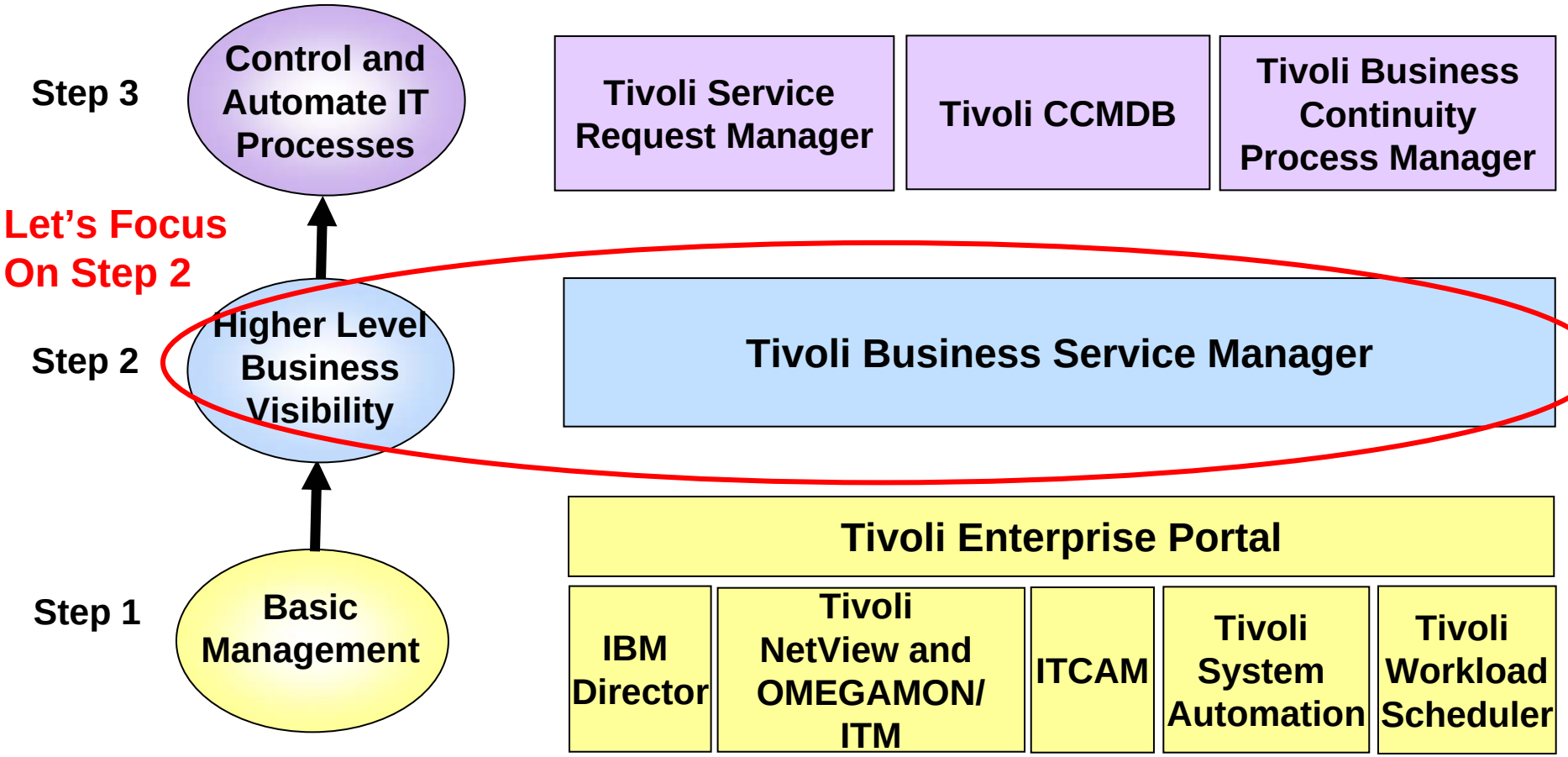
We need to prioritize IT issues based on business impact

Data Center Manager

You can achieve this with IBM Tivoli Business Service Manager ....

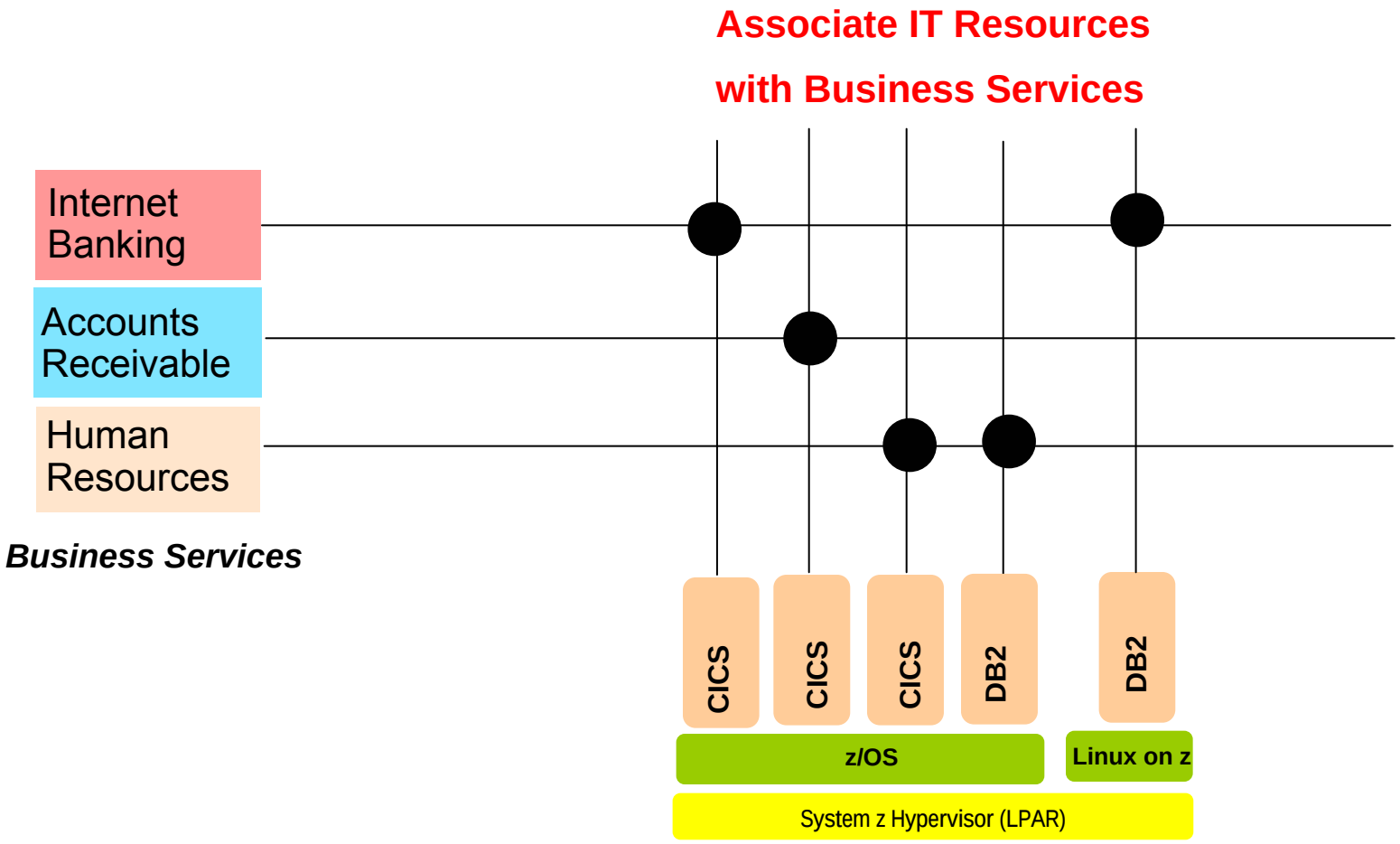
IBM

A Step by Step Approach to Implementing Tivoli Service Management Center for System z



Visibility… Control… Automation

Associate IT Resources with Business Services Using IBM Tivoli Business Service Manager (TBSM)



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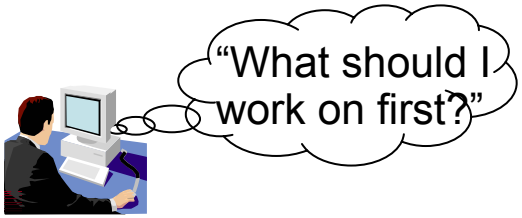


Determine Business Impact and Prioritize

TBSM

Events

Internet Banking

Accounts Receivable

Human Resources

Business Services

Event

Event

CICS

CICS

CICS

DB2

DB2

z/OS

Linux on z

System z Hypervisor (LPAR)

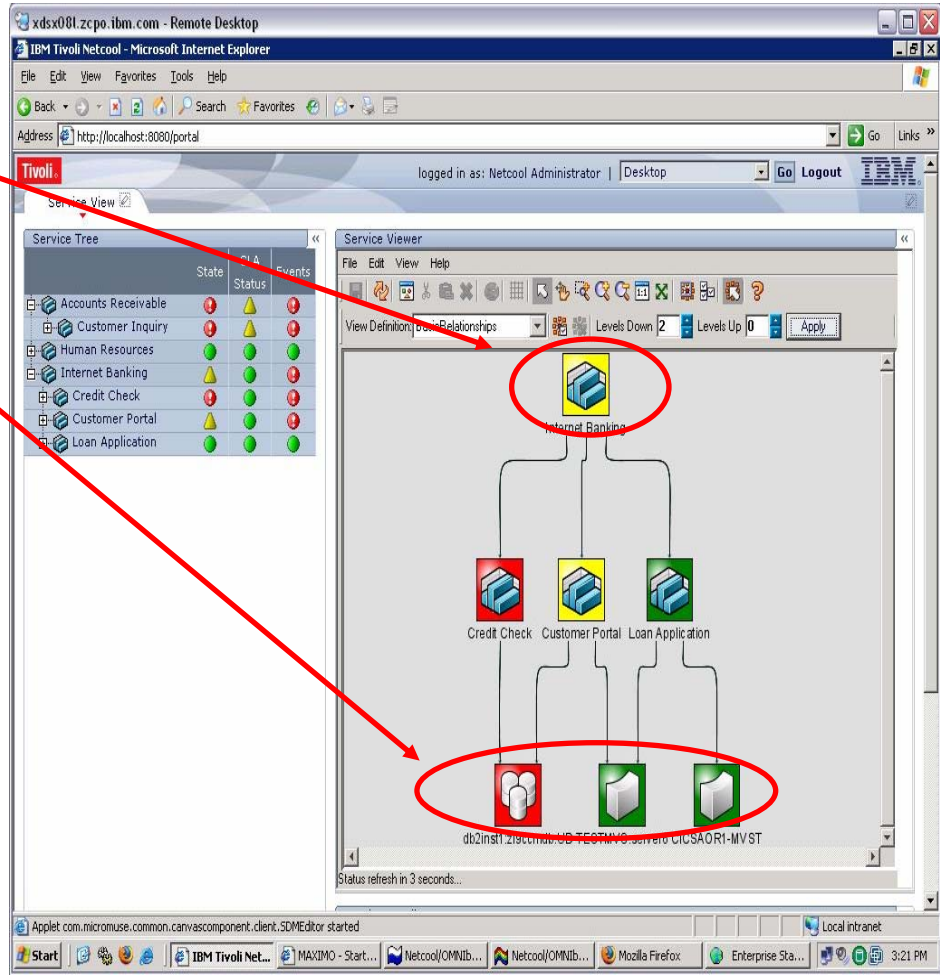
Tivoli Business Service Manager (TBSM)

Gain Real-time Business Visibility

- Group IT resources to define business services
- Determine business impact and isolate service availability and performance issues
  - Collect status of IT resources that make up a business service, such as:
    - Mainframe and distributed system events (z/OS, zLinux, Unix, Windows)
    - Application and transaction events across web servers, application servers, database servers (such as WebSphere Application Server, CICS, IMS, DB2 etc.)

Prioritize

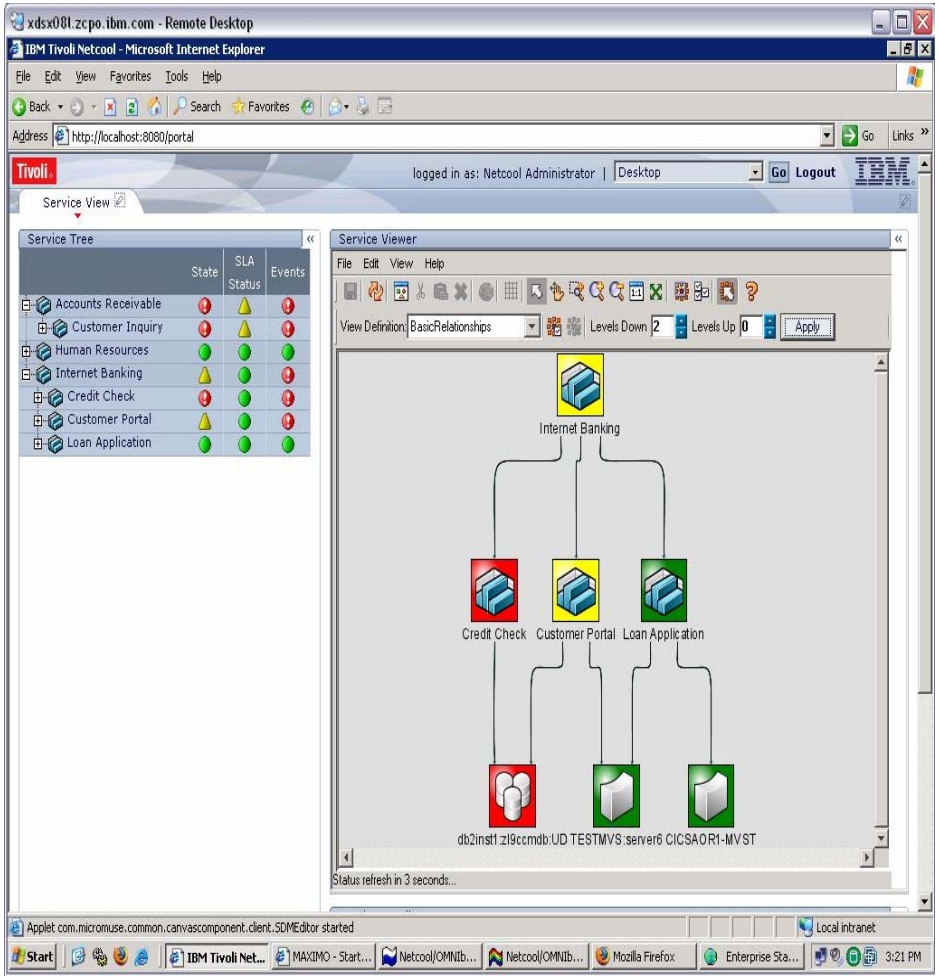
- Prioritize issues impacting business services against service level agreements



Runs on Linux on System z

DEMO: Tivoli Business Service Manager (TBSM)

- Show how problem in DB2 affects service levels of customer-facing business service (high priority)
- Assign this high priority issue to IT operations staff
- Show how IT Operations staff resolves the issue with Tivoli Enterprise Portal using *Expert Advice* and *Take Action*



Gain Real-Time Business Visibility and Prioritize!

Control and Automate IT Processes

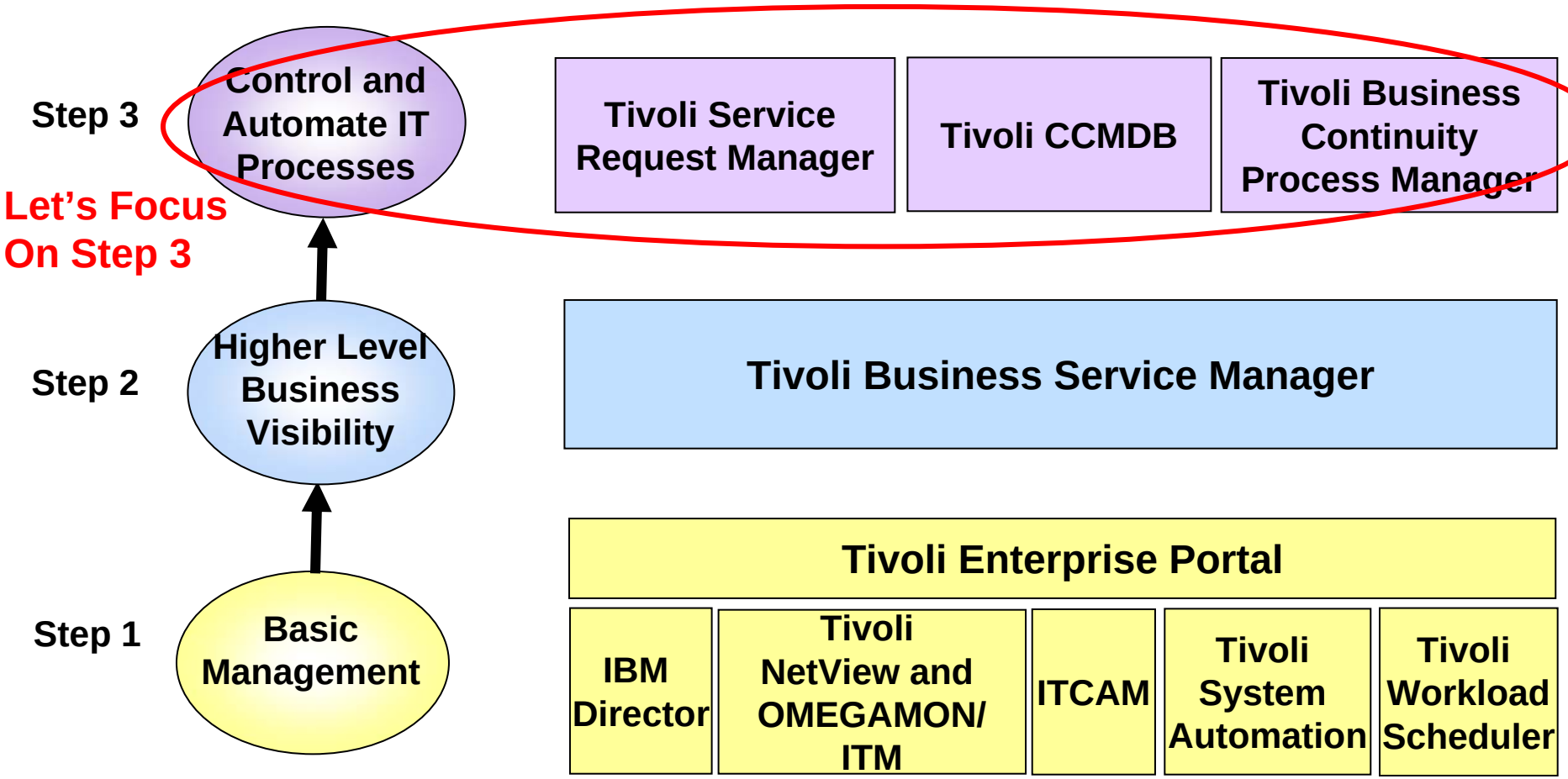
One of my key staff members is leaving.

My new employees don't have the experience to handle problems when they come up.

Data Center Manager

New Employee

A Step by Step Approach to Implementing Tivoli Service Management Center for System z



Visibility… Control… Automation

It Takes A Team To Resolve An IT Service Issue

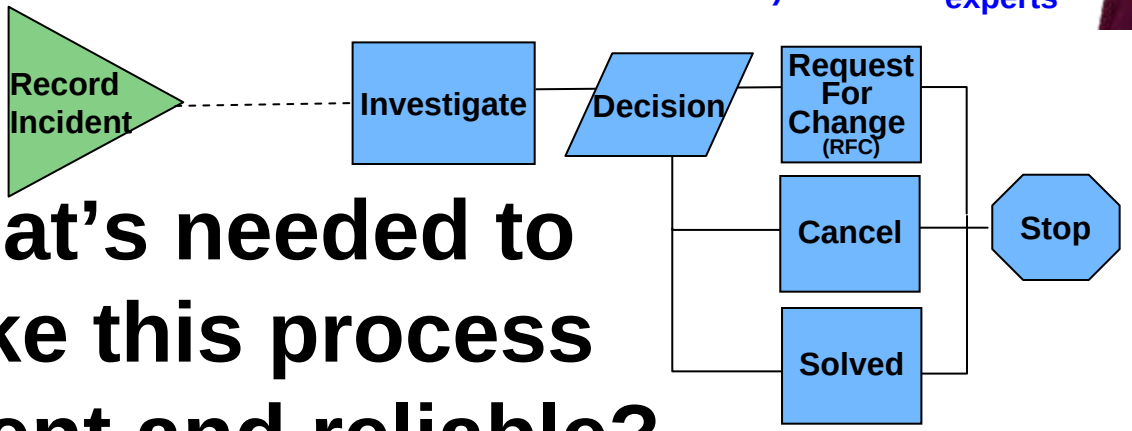
Customer
(Reports incident)

Operator
(Records Incident)

Incident Analyst
(Investigate and recommends a solution)

Subject matter experts

Customer calls to report: "online Loan application not responding"

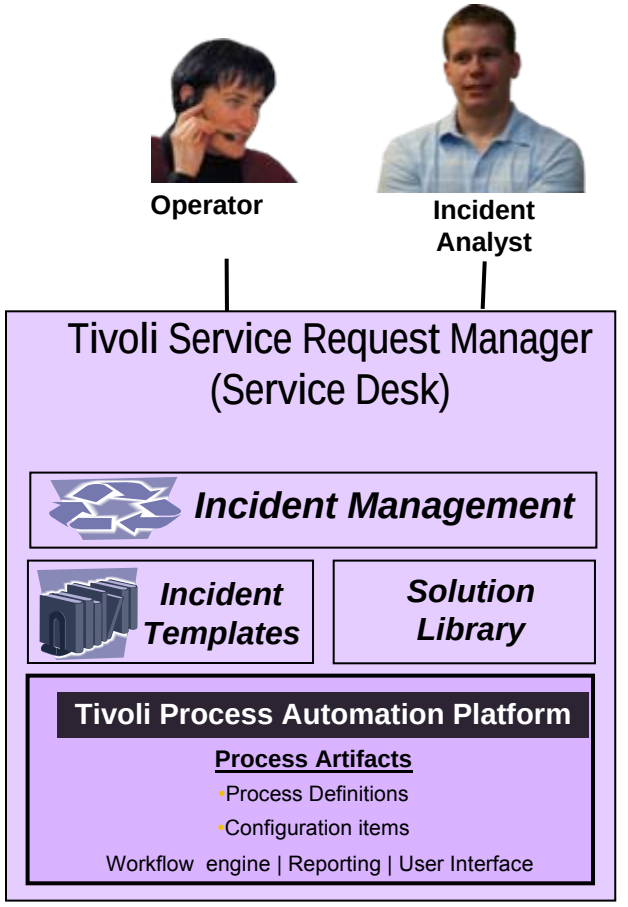


What's needed to make this process efficient and reliable?

A Structured Service Management Process

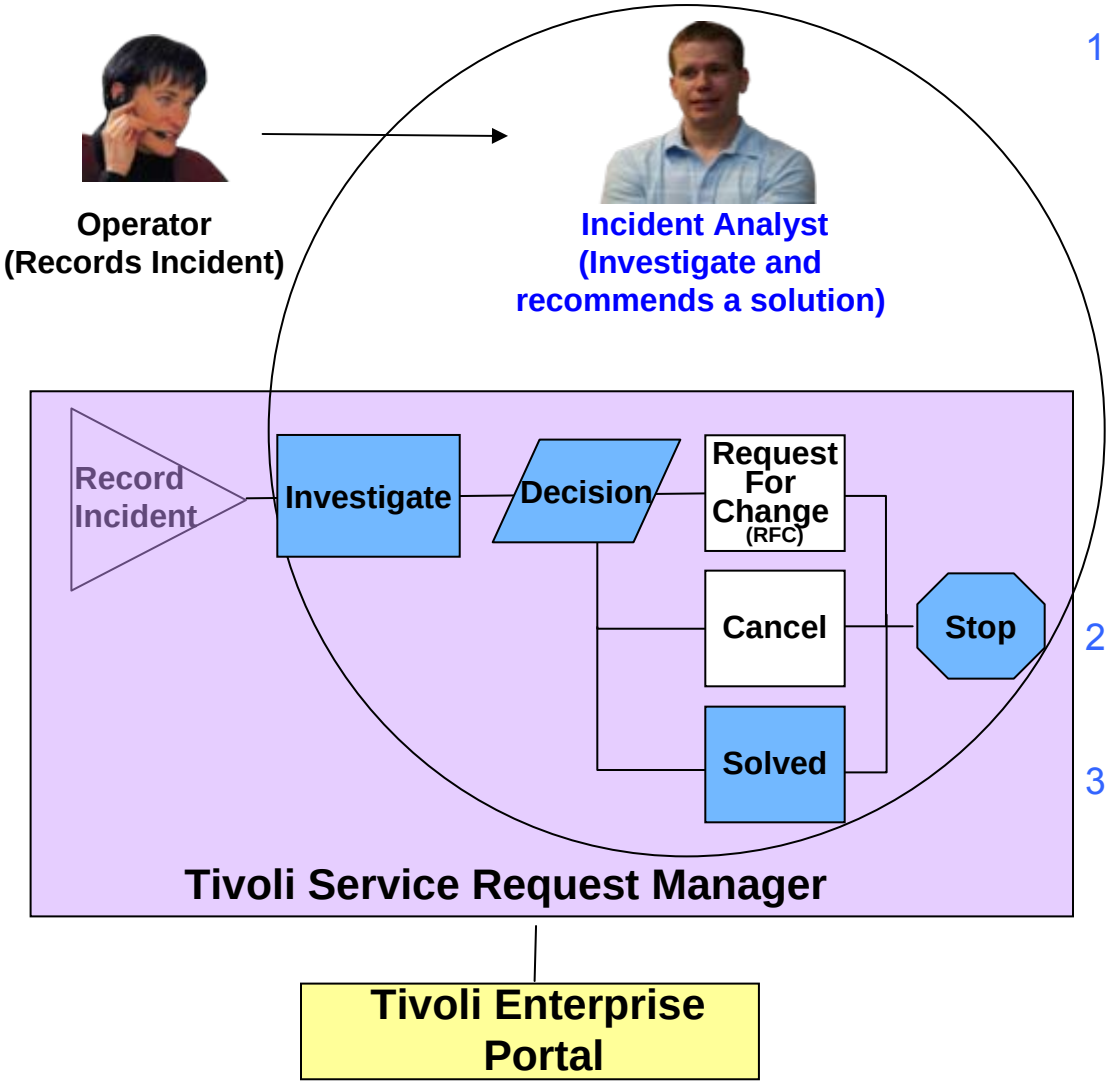
NEW Tivoli Service Request Manager (TSRM)-- Control and Automate Incident Management Process

- Central point to control service requests for help, information and service
- Create incident templates for common service desk calls and library of reusable solutions
  - Use templates to quickly create tickets
  - View updates and search library for solutions
- Automate incident management process
- Built on the common Tivoli Process Automation Platform to enable integration with other processes via common UI, common workflow engine, common database



Runs on Linux on System z

DEMO: Tivoli Service Request Manager



1. Investigate
   - Incident analyst selects an incident template from knowledge base
   - Incident template recommends activities:
     - Investigate problem with **Tivoli Enterprise Portal**
     - Verify problem root cause as being the CICS web service. Take action to resolve the problem
2. Decision
   - Decide on the next step
3. Solved
   - Mark problem as solved

Change Management with IBM Tivoli CCMDB

The resolution of the issue requires making a change

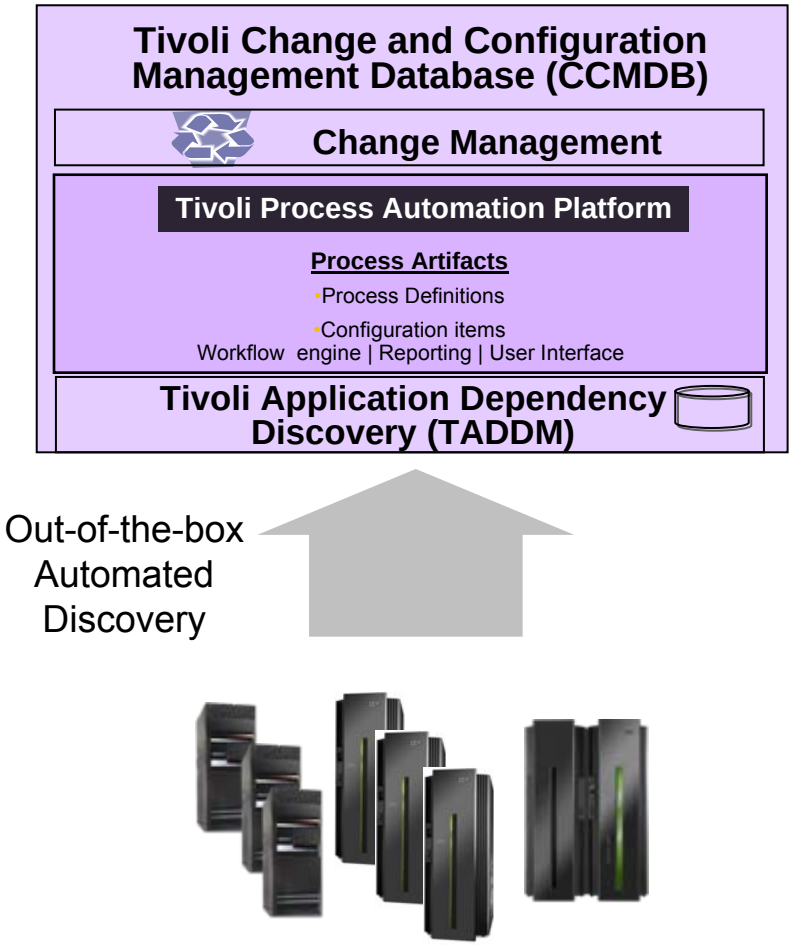
Data Center Manager

IBM Tivoli Change and Configuration Management Database (CCMDB) can help you manage your change process… Let me show you!

IBM

Tivoli Change And Configuration Management Database (CCMDB) -- Discover and Manage Changes

- Discover assets and keep track of changes
  - Discovery library adapter for z/OS
  - 200 out-of-the-box sensors discover distributed resources
- Automated dependency mapping via application descriptors
  - Capture information about modules in business applications via descriptors
  - Can be utilized by Tivoli Business Service Manager
- Leverages the common Tivoli Process Automation Platform to enable integration of change process with other processes via common UI, common workflow engine, common database



Tivoli CCMDB -- Control and Automate Change Management Process

- Associate change window with configuration items (managed assets)
  - Check for schedule conflicts
  - Prevent changes from occurring outside defined window
- Identify the impact of implementing a change
  - Identify and record impacted configuration items using the discovered relationship data
  - Subject Matter Experts can document assessment results
  - Get Approvals from all stakeholders before implementing the change
- Out of the box best practices customizable change management process

NEW Tivoli Business Continuity Process Manager -- Control and Automate Recovery Process

- Provides key processes required to identify and recover critical business systems when an outage occurs
- Workflows can route IT service continuity work orders through a succession of phases
  - From outage analysis, through approval and implementation to final verification that a recovery is complete
- Enables one to design test plans and run test scenarios to verify the effectiveness of an organizations' disaster recovery procedures
- Integrates with GDPS and the Tivoli System Automation to automate recovery tasks within the process

Mainframe as a Service Management Hub with Tivoli Service Management Center for System z

Tivoli Enterprise Portal

Tivoli Workload Scheduler
Tivoli System Automation
ITCAM
Tivoli NetView and
OMEGAMON/ITM

IBM Director

NEW

Tivoli Business
Service Manager

NEW

Tivoli Service
Request Manager

Tivoli CCMDB

Tivoli Business Continuity
Process Manager

Linux on z

System z Hypervisor

GP IFL zAAP

Management Focal
Point

Summary

Happy Customer

Successful Employee

Structured Management with System z can lower your costs, increase service levels and help you be responsive

IBM