Day 3 (3 hours)

Designing Services
Given customer requirements, plan an ITSI implementation
Identify site entities

Entities and Dependencies
- Using entities in KPI searches
- Defining dependencies

Designing Services

Given customer requirements, plan an ITSI implementation

Identify site entities

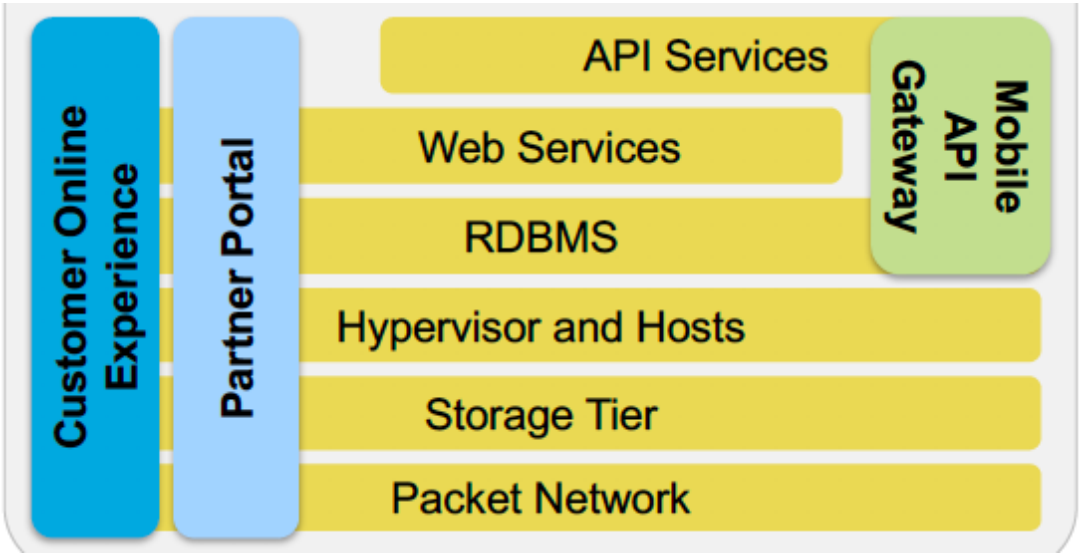
What is a Service?

- Service: a collection of IT objects that relate to your business goals and need to be monitored together.
  - It Is a system in organization that is important to the organization business
- Services can be
  - Technical or business oriented
  - High Level or low level
  - InTangible or physical objects
    - Network, Storage
  - Abstract, multi tiered, conceptual

    Partner portal
  - Groups of people or objects
  - Dynamic or Static
  - Wide or narrow in Scope
    - Global vs local
    - Corporate vs Team
- They should always focus on specific system, process or operations

ITSI Service

- A service in ITSI context is a collection of KPIs, values, combined into a single health score



Service Monitoring Use Cases

- IT Infrastructure: Reduce downtime and connectivity issue
- Call Center Monitoring: Customer experience
- Transaction troubleshooting: Identify business impacting transactions. monitor the various business processes such as product purchase.

Service Monitoring

- Service health is determined by the health of the components of each layer upon which the service depends

- Aggregated health of the layer is less important

Business Vs Technical

- Business Service is a system the organization needs to achieve their goals
  - Product purchased on an online sales company
  - Often no entity
  - Usually intangible
  - Business modelling processes

- Technical service is a physical system or resource the organization uses to accomplish the business services
- Usually tangible such as server farms, network, storages, etc

Scoping Services

- Consider the end users of each service and the relevent KPIs
- Consider KPIs relevancy: do all the kpis in a service relate to one process or system
- Reusability: even if a set of kpis does seem relevant, if they are also relevant to another service, they should be moved into a supporting service

Service Design Process

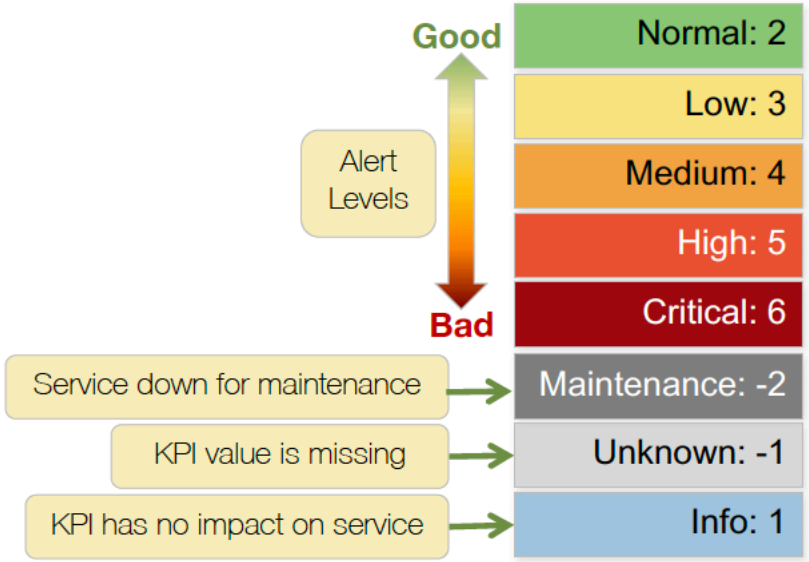
- Gather customer requirements in form of glass table designs to identify services and KPIs
- Group the KPIs according to services
- Gather related entity information such as servers, users, network devices, etc.
- Identify the KPI details:
  - KPI Weight (importance)
  - Data audit to identify the events
  - KPI run schedule
  - KPI Thresholds
- Service dependency mapping

Best Practices

- Ask questions:
  - What is the most important business
  - What is needed to do business
  - What are systems used in doing business
- Analyze the business and its processes to identify important services
- These services should apply to the actual operations of the site
- Define the key services first, add more details to the service descriptions iteratively.
- Don’t get too focused on low level services

Service Analyzer

KPI Tile	Service Tile
• **KPI name (bold)** • Service name	Service name
KPI value	Service Health Score
KPI value sparkline	Service Health Score sparkline
Click the tile to open a detailed view of the ***service*** (not KPI)	
Tile color = alert level *during the selected time range*	



Service Analyzer Controls and Display

- Tiles are arranged in order from most to least severe
- ! Icon indicated a Critical or High Notable Event group reported
- Sparklines: displayed as per the selected time period
- Number of KPIs in each condition
- Units for the KPIs
- View or complete KPI name
- View value on the sparkline
- Tiles arrangement: Max Severity or Aggregate

Services and KPIs

Key Performance Indicators	Services
KPI value • Measure of one factor affecting a service • Numeric • Lower is sometimes better (errors)	Service Health Score (during the selected time range) • Aggregation of the status of contributing KPIs' thresholds and importance weights • Ranges from 0 – 100 • Higher is always better

Alert severity level
• State of the KPI
  • Normal = good = green
  • Critical = problem = red
• Thresholds set by admin
	Alert Severity level
	• State of the Service
	  • Normal = good = green
	  • Critical = problem = red
	• Thresholds set by admin

Importance
- Weight of KPI value
- Set by admin

Services on which another service depends are treated as KPIs for calculating a health score

KPI Schedule:
- Range: from 1 minute to 1 day
- Interval: (frequency of updates) every 1 to 15 minutes

KPIs

- It is a numeric measurement of a specific quantity that relates to the service function
- For business services, KPIs are often measurement or targets, SLA or the goals
  - Quantity, transactions, Sales
- Technical Kpis are usually metrics about processes, system and devices
  - CPU, memory, disk
- Ensure that for each service, you define a KPI that determines how well the service is performing

Importance of KPs

- For each KPI we provide and importance weight between 0 and 11

  0:KPI is not used in scoring, useful for subordinate information, KPIs for which you do not want to affect operation

  11: Critical KPI, “minimum health score”,directly impacts the service score

  5: default weight

  Importance weight 11 has weight of 10 for calculation

  Service Health level cannot be higher than the alert level of the lowest minimum health indicator KPI

KPI Examples

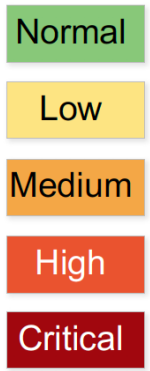
- Business
  - Online Retail store
    - Number of sold items
    - Numbers of orders placed
    - Items view only and abandoned
    - Items returned to store
  - Customer Experience
    - Comment by customers of various platforms
    - The Customer ratings
- Web Servers
  - CPU
  - MEM
  - Disk
- Network
  - Bandwidth utilization
  - Network Latency
  - Number of nodes
  - Number of errors

KPI Components

- KPI gets its value (alert_value) from:
  - A selected set of events
  - A calculation applied to fields in the selection
  - A schedule
  - Entity split settings
- Additional KPI configuration include importance, threshold maps, synchronization and anomaly detection settings
- Each KPI has an importance value, which defaults to 5 on a scale of 1 to 10
- If all the KPIs in a service have equal relevance to the overall service status, then you can leave the importance unchanged
- Some KPIs may be more important than others
- Kpi schedule synchronization https://docs.splunk.com/Documentation/ITSI/4.6.0/SI/Synchronize

Thresholds

- Thresholds are useful to assign meaning to the KPI and how ITSI converts a KPI's numeric value into status
- Important for analysts such as service desk, who do not know what to expect
- Normal is good and critical is bad
- Planning: understand the data
  - Is it bound/ unbound (percentage)
  - Usual value range
  - What is desired or normal Vs Problematic values



Planning Template

Create a template such as below.
Prioritize the identification of requirements, on paper glass table views, KPIs and then fill in the below template

KPI Name	Requirement	Schedule	Importance	Threshold	Entity	Event Selection	Calculation
Orders	Number of items ordered placed on mobile	Event 1 mins for last 5 mins	10	High – Normal – Low	No	Index=web	Distinct count of order ids which status as purchased

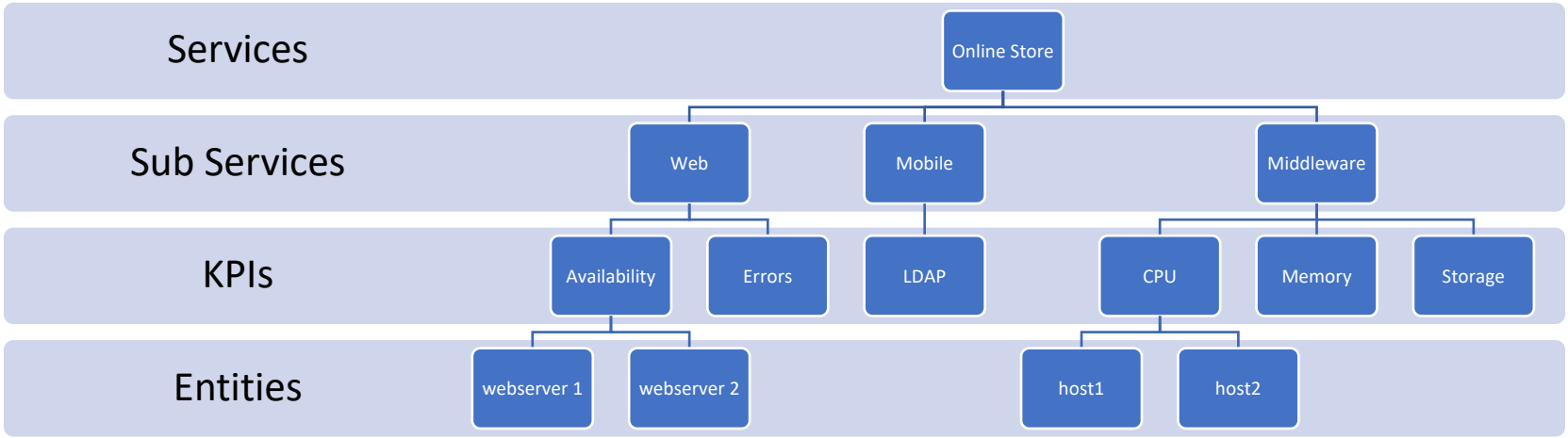
Entities

- List down the requirement with statements such as:
  - “show the sales broken down by product line”
  - “number of errors or response time by server..”
- This would indicate this KPI should be split by “entity”, where the entities are the product lines or servers
  - This should be noted in audit, but don’t include entity filtering in the selection statement – there are better ways
  - You don’t need to formally identity the entities this KPI applies to now; we do this during service definition
- Some high level KPIs will not map to entities

Service Dependency

- A service can depend on other services such as Web service may depend on middleware and database
- A dependency is basically as KPI for calculating service health score
- Dependency mapping can be based on
  - Health Score value of one or more services
  - One or more KPIs in another service
- Think about:
  - Are all the KPIs in my service focused on one actual services ?
  - If no, then we can categorize the service into sub services
  - If some KPIs show up in 2 or more services, then they should be moved into a new dependent services

Dependency Mapping



Service Dependencies and Side Panels

- Default: only filtered services and its KPIs are displayed
- Need to click on “show service dependencies” to display the other dependent services and their KPIs
- Click on “Show disabled services” to display disabled services

Service Templates

If you find out that several services are identical in nature, then design one service template as an abstract description of a service type

Then implement new services from the template

For Example: Mobile web sales, online sales, customer feedback portal, etc. are all type of web services

This would help in future propagation of service changes in bulk and immediately

Other Topics

- Customize Service Analyzer
- Service Drilldown
- KPI Drilldown
- Service Tree View
- Episode Review
- Dashboards Predictive
- Lab 1

Summary

- Identify each service name and description
- For each KPI, do the proper documentation including
  - Name
  - Description
  - Time span, update frequency
  - Entity, splits
  - Importance to SHC
  - Type of threshold
- Identify service template, it dependencies and team ownership

Entities

- Identify good use cases for entities
- Define entities in services
- Use entities in KPI searches
- Use pseudo entities in KPI searches

KPI Aggregate Vs Entity Values

- Usually, KPIs are single values but they can be broken into constituent values based on entities:
- Aggregate value: Number of orders places is a single value which shows the total number of orders placed in a defined time period
- Entity: break down of number of orders places based on the category
- Entity: Memory Utilization, CPU Load can be broken down by servers
- Entity: Set of servers used for order placement application only
- Pseudo – entity: split of aggregate value of a KPIs by the values found in the KPI results, such as product type

More on entities

- Entity are object, people, devices or abstract categories a service needs to be functional.
  - Typical examples are servers, network devices, user, POS devices
  - IOT: Manufacturing sites can include machine telemetry, assembly line data
  - Mobile service can have driver location data as entities
- Including an entity in service definition allows us to break the KPI data by entity
- All entities are in the Global team
- Each entity has a title and can have multiple alias values, which can be used to identify and filter it while defining the service KPIs.
- They can also have any number of information fields
- These fields and alias can be used together with AND / OR to define entity in service KPIS

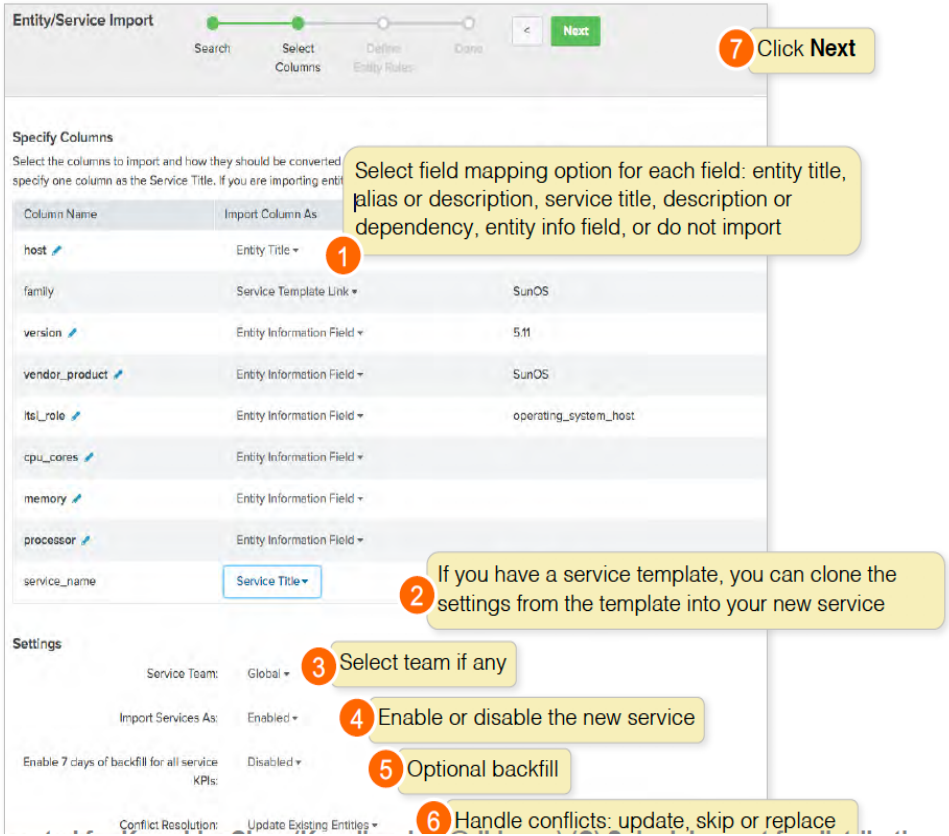
Entity information Example

- Service = webserver in datacenter
- you can add datacenter and role fields to entity
  - Datacenter can be used to identify location
  - Automatic using entity discovery if possible
  - Add the web server role manually to the entity

  In the service KPI, you can directly use a rule Location = datacenter and role=webserver to identify the entity
- You would also need to enable Filter entities in KPI configuration
- This would result in automatic data aggregation based on datacenter location

Managing Entities

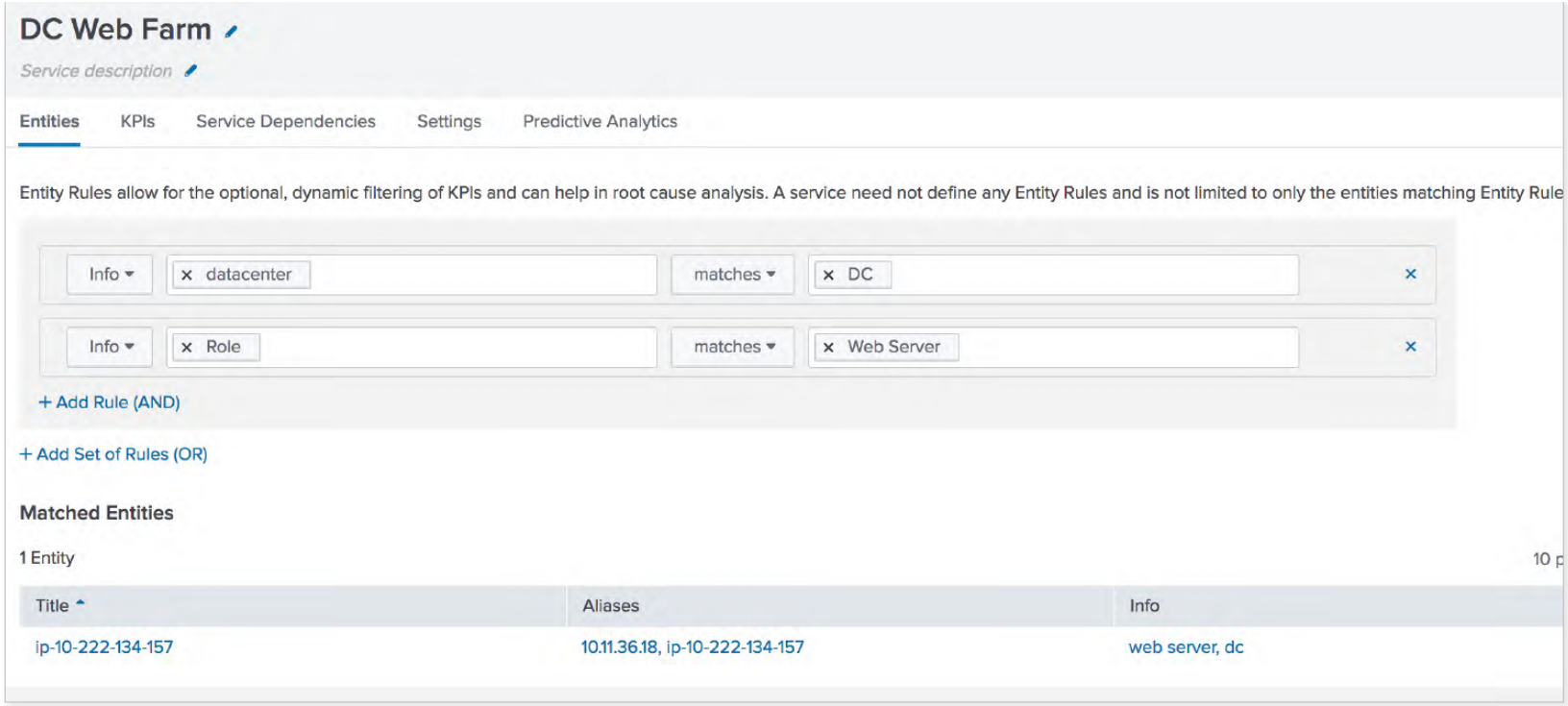
- Configure → Entities
  - Manual
  - From CSV
    - ITSI CSV Import module runs every 4 hrs
    - Initially disabled
  - From searchi
- Recurring Import
  - Data Inputs →
    - IT Service Intelligence CSV Import
      - More settings



What entities to import

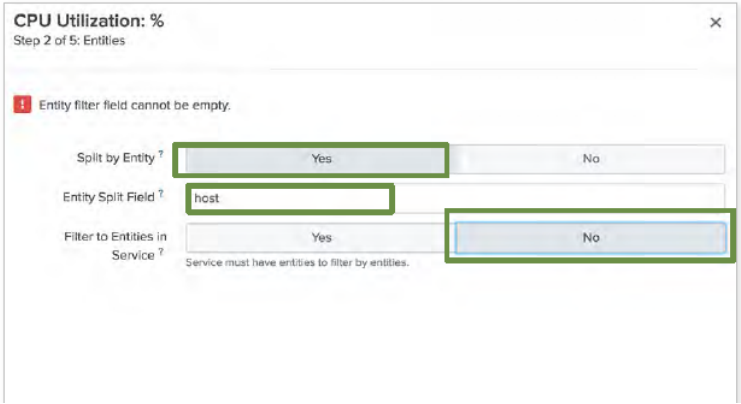
- Entity values become useful for service filtering
  - Entity rules in a service auto selects correct entities
- If entities are highly dynamic(rapidly and unpredictably created and destroyed),better create complex search statements that select events with right entities
  - Eg:cloud virtual servers being created and deleted in hours
  - In such cases, instead or vm id, machine purpose, owner or something else may be better entity

Adding Entities to a Service



Other Topics

- Filtering to entities in a service
- Entity Alias Filtering
- Using Pseudo entity
- Entity Health



Day 4 (2 hours)

Implementing Services
Use a service design to implement services in ITSI

Data Audit and Base Searches
Use a data audit to identify service key performance indicator
Design base searches