Digital Nurture 3.0

Deep Skilling Hand-Ons – ServiceNow

Week 2

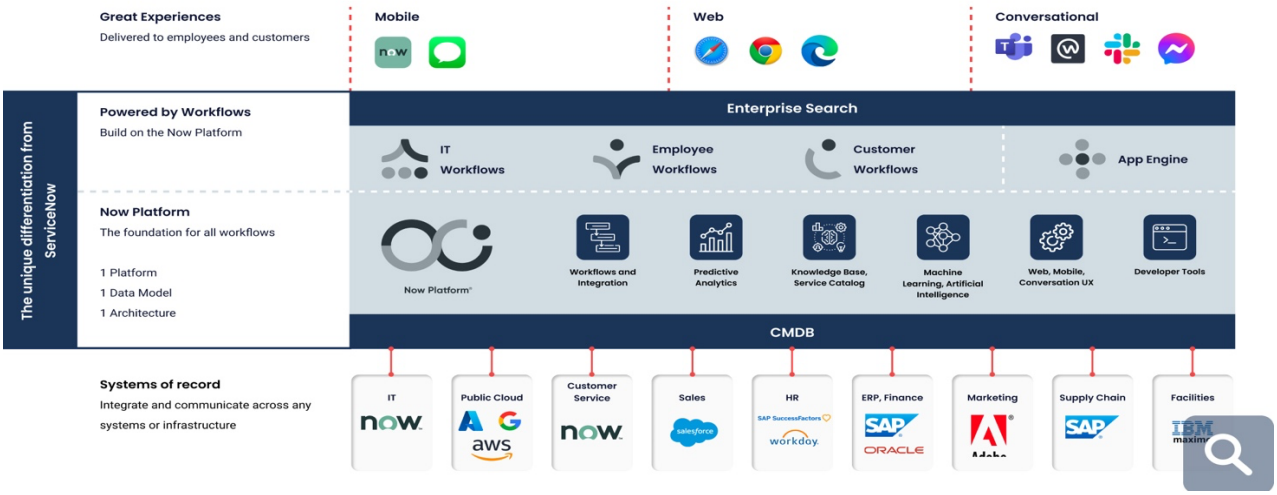
1. ServiceNow Platform Overview and Architecture

ServiceNow is a comprehensive cloud-based platform designed to automate and streamline various IT and business processes. Its architecture is built around a set of core components that work together to provide a unified experience for managing different workflows.

At the heart of ServiceNow is the **Instance**, which represents your organization's specific environment within the ServiceNow cloud. Each instance operates independently, with its own configurations, data, and applications.

The **Application Layer** in ServiceNow consists of modules that serve specific functions, such as Incident Management, Problem Management, Change Management, and more. These applications are pre-built but can be customized or extended to meet unique organizational needs.

Data in ServiceNow is organized into **Tables**. Each table represents a collection of records, and tables are akin to database tables in traditional systems. For instance, the incident table holds information related to incidents, including fields such as short_description, priority, and state. ServiceNow tables come with built-in forms for data entry and lists for data presentation.



Aditya Raj Singh
RA2111003010015
SRM Institute of Science & Technology

The **Business Logic Layer** consists of **Business Rules** and **Script Includes**. Business Rules are server-side scripts that execute in response to database operations like insert, update, or delete. They allow you to automate processes and enforce data consistency. For example, a Business Rule could be configured to send an email notification every time a new incident is created.

Client Scripts run on the user's browser and are used to manipulate form behavior and user interactions. For instance, a Client Script might be used to dynamically show or hide fields on a form based on the user's input.

Overall, the ServiceNow architecture is designed to be modular, allowing for customization and scalability. It integrates seamlessly with other systems and provides a robust foundation for automating IT and business processes.

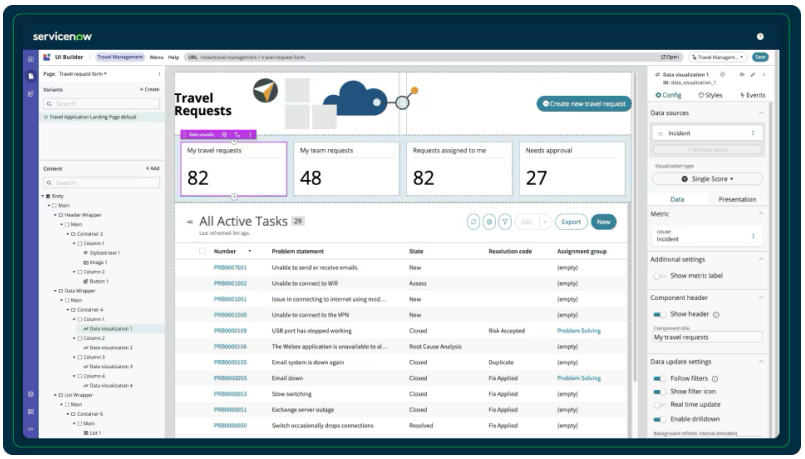
2. Customizing the User Interface and Branding Elements

Customizing the user interface (UI) and branding elements in ServiceNow allows organizations to tailor the platform to align with their brand identity and improve user experience.

UI Customization can be done through various means:

- **Themes**: You can apply themes to change the look and feel of the ServiceNow instance. This includes changing colors, fonts, and other visual elements to match your organization's branding guidelines. Navigate to **System Properties > Basic Configuration UI16** to update these settings.

- **UI Policies**: These are used to control the visibility and behavior of fields on forms. For example, you can use a UI Policy to make a field mandatory or read-only based on specific conditions.



Aditya Raj Singh
RA2111003010015
SRM Institute of Science & Technology

Here is an example of a UI Policy script that makes the short_description field mandatory when the incident state is set to ‘New’:

CODE:

```
// UI Policy to make the short_description field mandatory
(function executeRule(current, previous /*null when async*/) {
  // Check if the incident state is 'New'
  if (current.state == 'New') {
    // Set the short_description field as mandatory
    g_form.setMandatory('short_description', true);
  } else {
    // Set the short_description field as not mandatory
    g_form.setMandatory('short_description', false);
  }
})(current, previous);
```

3. Managing Tasks Efficiently Using ServiceNow Functionalities

ServiceNow provides robust functionalities for managing tasks, which include Incident Management, Change Management, and more. These features help organizations track and resolve tasks efficiently. For Incident Management, ServiceNow allows you to track and manage incidents from their creation to resolution. Incidents can be categorized, prioritized, and assigned to appropriate teams. For example, a Business Rule can be used to automatically assign incidents to a specific user or group based on certain criteria.

Here’s an example of a Business Rule that assigns all new incidents to the admin group:

```
// Business Rule to assign new incidents to the 'admin' group
(function executeRule(current, previous /*null when async*/) {
  if (current.operation() == 'insert') {
    // Assign the incident to the 'admin' group
    current.assignment_group.setDisplayValue('admin');
    current.update(); // Save the changes
  }
```


Aditya Raj Singh
RA2111003010015
SRM Institute of Science & Technology

})(current, previous);

Similarly, **Change Management** helps in managing changes in the IT environment. You can define change requests, plan implementations, and handle approvals.
Efficient task management in ServiceNow is facilitated through these functionalities and can be extended by custom scripts and workflows to automate repetitive tasks and enforce business rules.

4. Configuring Notifications and Implementing Knowledge Management Practices

Notifications in ServiceNow are used to alert users about important events, such as the creation or update of records. Notifications can be configured to send emails, SMS messages, or even trigger other actions.
To configure notifications, navigate to **System Notification > Email > Notifications**. You can create new notifications and define conditions under which they should be sent. Notifications can include dynamic content and be customized to meet specific needs.
Here's an example of a simple script to send an email notification when an incident is created:

```
// Notification Script to send an email when an incident is created
var notification = new GlideNotification();
notification.setTo('user@example.com');
notification.setSubject('New Incident Created');
notification.setBody('An incident has been created in ServiceNow. Please review it at your earliest convenience.');
notification.send();
```

Knowledge Management in ServiceNow involves managing and organizing knowledge articles, which provide users with self-service support and information. You can create knowledge bases, categorize articles, and control access to them.
Here's an example of a script that creates a new knowledge article:

```
// Script to create a Knowledge Article
var kbArticle = new GlideRecord('kb_knowledge');
kbArticle.initialize();
kbArticle.short_description = 'How to use ServiceNow';
kbArticle.text = 'Detailed instructions on using ServiceNow...';
kbArticle.kb_knowledge_base = 'General';
kbArticle.insert(); // Save the article
```


Aditya Raj Singh
RA2111003010015
SRM Institute of Science & Technology

5. Creating and Managing Service Catalogs Effectively

Service catalogs in ServiceNow are used to provide a structured way for users to request services and products. You can create catalog items, organize them into categories, and define various attributes and workflows.
To create a service catalog item, go to **Service Catalog > Catalog Definitions > Maintain Items**. Here, you can define new items, including their details, order guides, and workflows.

Here's an example of a script to create a new catalog item:

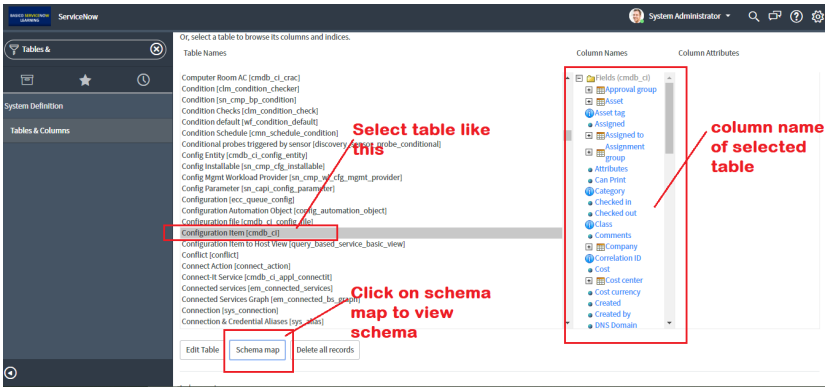
```
// Script to create a new Service Catalog item
var catalogItem = new GlideRecord('sc_cat_item');
catalogItem.initialize();
catalogItem.name = 'New Laptop Request';
catalogItem.short_description = 'Request for a new laptop.';
catalogItem.insert(); // Save the item
```

This script creates a new record in the sc_cat_item table, setting the name and short description for the catalog item, and then saves it.
This script initializes a new record in the kb_knowledge table, sets the short description and text of the article, and then inserts it into the database.

6. Configuring Tables and Fields, as well as Access Control Lists

Tables and Fields in ServiceNow are used to store and organize data. You can create custom tables and add fields to them to capture specific information relevant to your organization.
To create a new table, navigate to **System Definition > Tables**. You can define the table's name, properties, and relationships with other tables. Adding fields to the table involves specifying the field name, type, and attributes.

Aditya Raj Singh
RA2111003010015
SRM Institute of Science & Technology



Here's an example of a script to add a field to an existing table:

```
// Script to add a new field to the 'incident' table
var table = new GlideRecord('sys_db_object');
table.get('incident');
table.addField('u_custom_field', 'string'); // Add a new string field
table.update(); // Save changes
```

Access Control Lists (ACLs) define permissions and control access to records and fields. ACLs can be configured to ensure that only authorized users can view or modify certain data.

To create an ACL, navigate to **System Security > Access Control (ACL)**. Define the conditions and permissions required for accessing records or fields.

Here's an example of an ACL script that allows access only if the user has the admin role:

javascript

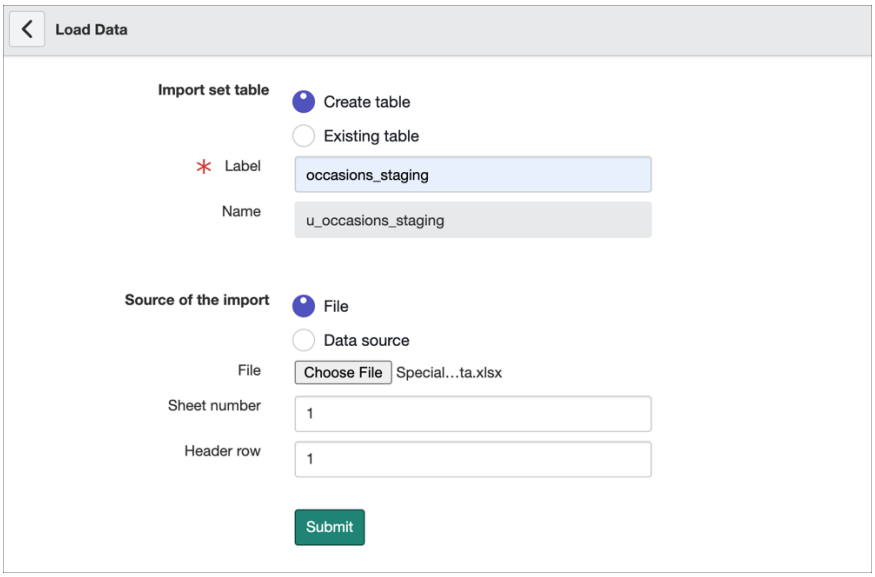
Copy code

```
// ACL Script to allow access based on user role
(function checkAccess() {
  if (gs.hasRole('admin')) {
    answer = true; // Allow access
  } else {
    answer = false; // Deny access
  }
})();
```

7. Importing Data into ServiceNow and Managing the CMDB

Aditya Raj Singh
RA2111003010015
SRM Institute of Science & Technology

Data Import into ServiceNow can be managed using Import Sets. Import Sets allow you to bring data from external sources into ServiceNow. You define data sources, transform maps, and load the data into the appropriate tables.
To start an import, navigate to **System Import Sets > Load Data**. Define the data source, map the fields, and then import the data.



Here's an example of a script to create an Import Set:

```
// Script to create a new Import Set
var importSet = new GlideRecord('sys_import_set');
importSet.initialize();
importSet.name = 'External Data Import';
importSet.import_source = 'CSV';
importSet.insert(); // Save the Import Set
```

Configuration Management Database (CMDB) in ServiceNow is used to manage and track Configuration Items (CIs). The CMDB helps in understanding the relationships and dependencies between different components of the IT environment.
To manage CIs, you can create new records in the cmdb_ci table and define attributes such as the CI's name, type, and status.

```
// Script to create a new Configuration Item
```


Aditya Raj Singh
RA2111003010015
SRM Institute of Science & Technology

```
var ci = new GlideRecord('cmdb_ci');
ci.initialize();
ci.name = 'Server001';
ci.install_status = 'In Production';
ci.insert(); // Save the CI
```

8. Integrating ServiceNow with Other Systems and Applications

ServiceNow supports various integration methods to connect with external systems and applications. This includes using REST APIs, SOAP APIs, and integration connectors.
REST API allows you to interact with ServiceNow data using HTTP methods. You can perform CRUD operations and integrate with external systems.
Here's an example of a REST API call using a server-side script:

```
// Script to make a REST API call
var client = new sn_ws.RESTMessageV2();
client.setHttpMethod('GET');
client.setEndpoint('https://api.example.com/data');
var response = client.execute();
var responseBody = response.getBody();
```

SOAP API is another method for integration, allowing you to interact with ServiceNow using SOAP web services.

Aditya Raj Singh
RA2111003010015
SRM Institute of Science & Technology

Here’s an example of a SOAP API call:

```
// Script to make a SOAP API call
var client = new sn_ws.SOAPMessageV2();
client.setHttpMethod('POST');
client.setEndpoint('https://api.example.com/soap');
client.setRequestBody('<soapenv:Envelope>...</soapenv:Envelope>');
var response = client.execute();
var responseBody = response.getBody();
```

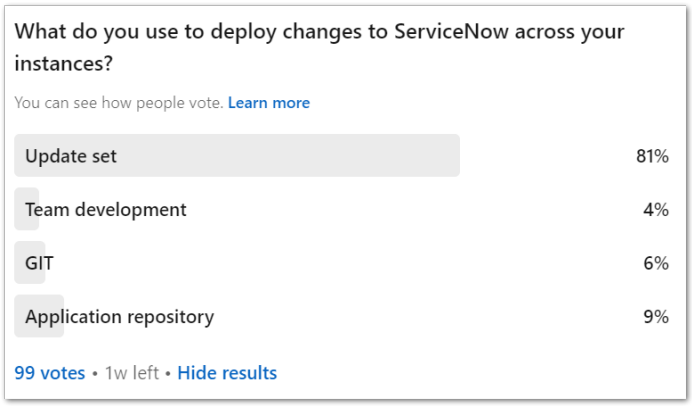
9. Utilizing Update Sets, Events, and Platform Statistics for Effective Administration

Update Sets are used to capture and move customizations between ServiceNow instances. They allow you to track changes and deploy them to different environments.
To manage Update Sets, navigate to **System Update Sets > Local Update Sets**. Create new update sets and add changes to them.

Here’s an example of a script to create an Update Set:

```
// Script to create a new Update Set
var updateSet = new GlideRecord('sys_update_set');
updateSet.initialize();
updateSet.name = 'New Update Set';
updateSet.insert(); // Save the Update Set
```


Aditya Raj Singh
RA2111003010015
SRM Institute of Science & Technology



Events in ServiceNow trigger notifications and other actions. You can define events to respond to specific conditions or changes in the system.
To create an event, go to **System Policy > Events** and define the event name and properties.

Here's an example of a script to create an event:

```
var event = new GlideRecord('sysevent');
event.initialize();
event.name = 'incident_created';
event.insert(); // Save the event
```

Platform Statistics are used to monitor the performance and health of your ServiceNow instance. You can use tools and reports available in ServiceNow to analyze system performance and identify potential issues.

Here's an example script to collect performance data:

```
// Script to collect system performance data
var stats = new GlideRecord('sys_performance');
stats.initialize();
stats.metric_name = 'Response Time';
stats.value = '100ms';
stats.insert(); // Save the performance data
```

By leveraging these features and functionalities, you can effectively manage and customize your ServiceNow environment to meet your organization's needs and improve overall efficiency.

Aditya Raj Singh
RA2111003010015
SRM Institute of Science & Technology

Aditya Raj Singh
RA2111003010015
SRM Institute of Science & Technology