

Performance and Testing

Educational Organisation Management using ServiceNow

Date	31-10-2025
Team ID	NM2025TMID06510
Project Name	Educational Organisation Management using ServiceNow

Performance and Testing

Ensuring the **reliability, efficiency, and usability** of the ServiceNow-based Educational Organisation Management System is critical before deployment. This section focuses on the strategies and methodologies to measure **system performance, validate functionality, and ensure user satisfaction**.

Data Applying

The screenshot shows a ServiceNow interface for creating a new record. The title bar indicates 'Salesforce - Create SAL0001039'. The top navigation bar includes links for 'All', 'Favorites', 'History', 'Workspaces', and 'Admin'. On the left, there's a 'ServiceNow' logo and a 'New record' button. The main form contains the following fields:

Admin Number	SAL0001039	Fathers Name	Sam
Admin Date	2025-09-11	Mother Name	Lia
Grade	B	Father Cell	1234
Student Name	Elon	Mother Cell	4321

At the bottom left is a 'Submit' button.

Admission - Create SAL0001040

Admission Number: SAL0001039

Purpose of join: Teacher

Student Name: Elon

Fathers Name: Sam

Mother Name: Lia

Comments: new admission

Admin Date: 2025-09-11

Grade: B

Fee: \$ 33,330.00

Father Cell: 1234

Mother Cell: 4321

Admin Status: Joined

School Details:

- School area: Near Market
- School: Naresh It

Students Progress - Create SAL0001041

Admission Number: SAL0001039

Admin Number: SAL0001041

Admin Date: 2025-09-11

Student Name: Elon

Grade: B

Fathers Name: Sam

Mother Name: Lia

Father Cell: 1234

Mother Cell: 4321

student progress

Science	89
Hindi	90
Telugu	88
Social	94
Maths	88
English	78

Total: 527

Result: Pass

Percentage: 87.833333333333%

1. Performance Testing

Purpose:

Performance testing evaluates how the system behaves under various load conditions, ensuring it can handle real-time operations without degradation.

Key Objectives:

- Verify the system's responsiveness under normal and peak usage.
- Ensure quick access to student records, dashboards, and reports.
- Identify and eliminate performance bottlenecks in workflows and database queries.

Performance Testing Metrics:

1. Response Time:

- Average time to retrieve student records, process admissions, or generate reports.
- Target: ≤ 2 seconds for most operations.

2. Throughput:

- Number of transactions the system can handle per minute (e.g., admissions, grade uploads).
- Ensures scalability during peak periods like enrollment or exam results.

3. Load Capacity:

- Maximum number of concurrent users (students, teachers, admins) the system can support without failure.

4. Resource Utilization:

- CPU, memory, and network usage under load conditions to ensure efficient system operation.

Testing Tools:

- ServiceNow Performance Analytics (for platform-specific metrics)
- JMeter or LoadRunner (for simulating concurrent users and stress testing)

Table Data

servicenow All Favorites History Workspaces Admin

Table - Salesforce

A table is a collection of records in the database. Each record corresponds to a row in a table, and each field on a record corresponds to a column on that table. Applications use tables and records to manage data and processes. [More info](#)

* Label * Name

Application Global Remote Table

Column label	Type	Reference	Max length	Default value	Display
Admin Date	Date	(empty)	40		false
Admin Number	String	(empty)	40	javascript.getNextObjNumberPadded();	true
Class	System Class Name	(empty)	80	javascript.current.getClassName();	false
Created	Date/Time	(empty)	40		false
Created by	String	(empty)	40		false
Father Cell	String	(empty)	40		false
Fathers Name	String	(empty)	80		false
Grade	Choice	(empty)	40		false
Mother Cell	String	(empty)	40		false
Mother Name	String	(empty)	80		false
Student Name	String	(empty)	80		false
Sys ID	Sys ID (GUID)	(empty)	32		false
Updated	Date/Time	(empty)	40		false
Updated by	String	(empty)	40		false
Updates	Integer	(empty)	40		false

Insert a new row... [New](#)

Columns Controls Application Access

Table Columns Column label Search

Dictionary Entries

Related Links [Form](#) [List](#) [Design Form](#) [Layout Form](#) [Model](#) [Show Form](#) [Style List](#) [Showathing Map](#) [Add to Service Catalog](#) [Run this page](#) [Explore REST API](#)

Delete Update Delete All Records

servicenow All Favorites History Workspaces Admin

Table - Admission

A table is a collection of records in the database. Each record corresponds to a row in a table, and each field on a record corresponds to a column on that table. Applications use tables and records to manage data and processes. [More info](#)

* Label * Name

Application Global Remote Table

Column label	Type	Reference	Max length	Default value	Display
Admin Date	Date	(empty)	40		false
Admin Number	String	(empty)	40	javascript.getNextObjNumberPadded();	true
Admin Status	Choice	(empty)	40		false
Admission Number	Reference	Salesforce	32		false
Area	String	(empty)	40		false
City	String	(empty)	40		false
Comments	String (full UTF-8)	(empty)	255		false
Created	Date/Time	(empty)	40		false
Created by	String	(empty)	40		false
District	String	(empty)	40		false
Father Cell	String	(empty)	40		false
Fathers Name	String	(empty)	80		false
Fee	Price	(empty)	20		false
Grade	Choice	(empty)	40		false
House No	String	(empty)	40		false
Mandal	String	(empty)	40		false
Mother Cell	String	(empty)	40		false
Mother Name	String	(empty)	80		false
Pincode	Choice	(empty)	40		false

Insert a new row... [New](#)

Columns Controls Application Access

Table Columns Column label Search

Dictionary Entries

Related Links [Form](#) [List](#) [Explore REST API](#)

Delete Update Delete All Records

servicenow All Favorites History Workspaces Admin

Table - Students Progress

A table is a collection of records in the database. Each record corresponds to a row in a table, and each field on a record corresponds to a column on that table. Applications use tables and records to manage data and processes. [More info](#)

* Label * Name

Application Global Remote Table

Column label	Type	Reference	Max length	Default value	Display
Admin Date	Date	(empty)	40		false
Admin Number	String	(empty)	40	javascript.getNextObjNumberPadded();	true
Admission Number	Reference	Salesforce	32		false
Class	System Class Name	(empty)	80	javascript.current.getClassName();	false
Created	Date/Time	(empty)	40		false
Created by	String	(empty)	40		false
English	String	(empty)	100		false
Father Cell	String	(empty)	40		false
Fathers Name	String	(empty)	80		false
Grade	Choice	(empty)	40		false
Hindi	String	(empty)	100		false
Maths	String	(empty)	100		false
Mother Cell	String	(empty)	40		false
Mother Name	String	(empty)	80		false
Percentage	String	(empty)	200		false
Result	String	(empty)	100		false
Science	String	(empty)	100		false
Social	String	(empty)	100		false
Student Name	String	(empty)	80		false
Sys ID	Sys ID (GUID)	(empty)	32		false

Insert a new row... [New](#)

Columns Controls Application Access

Table Columns Column label Search

Dictionary Entries

Related Links [Form](#) [List](#) [Explore REST API](#)

Delete Update Delete All Records

2. Functional Testing

Purpose:

Functional testing validates that the system meets its specifications and works as expected for end users.

Key Functional Areas to Test:

1. Student Admissions and Enrollment:

- Form submission, validation, approval workflows, and automated notifications.

2. Database Operations:

- Creation, update, deletion, and retrieval of student and faculty records.

3. Academic Tracking:

- Attendance, grade entry, performance analytics, and report generation.

4. Workflow Automation:

- Approvals, notifications, escalations, and task assignments.

5. Security and Access Control:

- Role-based access for students, teachers, and administrators.
- Proper authentication, authorization, and data confidentiality.

Testing Approach:

- **Unit Testing:** Verify individual scripts, forms, and workflows.
 - **Integration Testing:** Ensure seamless interaction between modules (admissions, performance, reporting).
 - **User Acceptance Testing (UAT):** Real users (students, teachers, admins) validate usability, workflows, and system output.
-

3. Usability Testing

Purpose:

To ensure that the system is user-friendly and intuitive for all stakeholders.

Focus Areas:

- Easy navigation between modules.

- Clarity of dashboards, forms, and reports.
- Minimization of steps required for critical tasks (admission, grade submission, report generation).
- Accessibility on multiple devices (desktop, tablet, mobile).

Methods:

- Conducting surveys and feedback sessions with target users.
 - Observing users performing typical tasks and identifying pain points.
-

4. Regression Testing

Purpose:

To ensure that updates, bug fixes, or new features do not break existing functionality.

Approach:

- Maintain automated test scripts for core workflows.
 - Periodically run regression tests after each system update or customization.
-

5. Performance Optimization Strategies

- **Database Indexing:** Improve speed of queries for large student datasets.
 - **Caching Frequently Used Data:** Reduce server load for recurring requests (e.g., dashboard metrics).
 - **Workflow Optimization:** Streamline approval flows to reduce processing time.
 - **Load Balancing:** Ensure the system can scale horizontally during peak usage.
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6. Reporting and Monitoring

- **Real-Time Dashboards:** Track system health, response times, and user activity.
- **Alerts for Failures or Delays:** Automated notifications for slow workflows or failed processes.
- **Periodic Performance Reviews:** Scheduled evaluation of system logs and analytics to identify and resolve bottlenecks.

Client Scripts

Client Script - Disable Fields

New client scripts are run in strict mode, with direct DOM access disabled. Access to jQuery, prototype and the window object are likewise disabled. To disable this on a per-script basis, configure this form and add the "isolate script" field. To disable this feature for all new globally-scoped client-side scripts set the system property "glide.script.block.client.globals" to false.

Name: Disable Fields	Application: Global
Table: Students Progress [u_students_progress]	Active: <input checked="" type="checkbox"/>
UI Type: All	Inherited: <input type="checkbox"/>
Type: onLoad	Global: <input checked="" type="checkbox"/>

Description:

Messages:

```

1 function onLoad() {
2
3     //Type appropriate comment here, and begin script below
4
5     g_form.setDisabled("u_total",true);
6
7     g_form.setDisabled("u_percentage",true);
8
9     g_form.setDisabled("u_result",true);
10
11 }

```

Isolate script:

Related Links

Run Point Scan

Update Versions

Name	Recorded at	State	Source	Reverted from
sr1_script_client_6e91a293833c36106ebc979fead3ae	2025-10-30 07:45:43	Current	Update Set: Default	(empty)
sr1_script_client_6e91a293833c36106ebc979fead3ae	2025-10-30 06:56:02	Previous	Update Set: Default	(empty)

Actions on selected rows... New

Client Script - Picode Update

New client-scripts are run in strict mode, with direct DOM access disabled. Access to jQuery, prototype and the window object are likewise disabled. To disable this on a per-script basis, configure this form and add the "isolate script" field. To disable this feature for all new globally-scoped client-side scripts set the system property "glide.script.block.client.globals" to false.

Name: Picode Update	Application: Global
Table: Admission [u_admission]	Active: <input checked="" type="checkbox"/>
UI Type: Desktop	Inherited: <input type="checkbox"/>
Type: onChange	Global: <input checked="" type="checkbox"/>

Field name: Picode

Description:

Messages:

```

1 function onChange(control, newValue, oldValue, isloading, isTemplate) {
2
3     if (isloading || newValue === '') {
4
5         return;
6
7     }
8
9     var a = g_form.getvalue('u_picode');
10
11    if(a == '599351')
12    {
13
14        g_form.setvalue('u_mandal', 'kethal');
15
16        g_form.setvalue('u_cit', 'kethal');
17
18        g_form.setvalue('u_district', 'kangareddy');
19
20
21    }
22
23 }

```

Isolate script:

Related Links

Run Point Scan

Update Versions

Name	Recorded at	State	Source	Reverted from
sr1_script_client_6e91a293833c36106ebc979fead3ae	2025-10-30 07:45:43	Current	Update Set: Default	(empty)
sr1_script_client_6e91a293833c36106ebc979fead3ae	2025-10-30 06:56:02	Previous	Update Set: Default	(empty)

Actions on selected rows... New

Client Script - Auto populate

New client-scripts are run in strict mode, with direct DOM access disabled. Access to jQuery, prototype and the window object are likewise disabled. To disable this on a per-script basis, configure this form and add the "isolate script" field. To disable this feature for all new globally-scoped client-side scripts set the system property "glide.script.block.client.globals" to false.

Name: Auto populate	Application: Global
Table: Admission [u_admission]	Active: <input checked="" type="checkbox"/>
UI Type: Mobile / Service Portal	Inherited: <input type="checkbox"/>
Type: onChange	Global: <input checked="" type="checkbox"/>

Field name: Admin Number

Description:

Messages:

```

1 function onChange(control, newValue, oldValue, isloading, isTemplate) {
2
3     if (isloading || newValue === '') {
4
5         return;
6
7     }
8
9     //Type appropriate comment here, and begin script below
10
11    var a = g_form.getReference('u_admission_number');
12
13    g_form.setvalue('u_adm_date',a.u_admin_date);
14
15    g_form.setvalue('u_grade',a.u_grade);
16
17    g_form.setvalue('u_student_name',a.u_student_name);
18
19    g_form.setvalue('u_father_name',a.u_father_name);
20
21    g_form.setvalue('u_mother_name',a.u_mother_name);
22
23 }

```

Isolate script:

Related Links

Run Point Scan

Update Versions

Name	Recorded at	State	Source	Reverted from
sr1_script_client_6e91a293833c36106ebc979fead3ae	2025-10-30 07:45:43	Current	Update Set: Default	(empty)
sr1_script_client_6e91a293833c36106ebc979fead3ae	2025-10-30 06:56:02	Previous	Update Set: Default	(empty)

Actions on selected rows... New

Client Script - Percentage

New client scripts are run in strict mode, with direct DOM access disabled. Access to jQuery, prototype and the window object are likewise disabled. To disable this on a per-script basis, configure this form and add the "isolate script" field. To disable this feature for all new globally-scoped client-side scripts set the system property "glide.script.block.client.global" to false.

Name: Percentage
Table: Students Progress [u_students_progress]
UI Type: All
Type: onChange
Field name: Total
Application: Global
Active:
Inherited:
Global:

Description:
Messages:
Script:

```

1 function onChange(control, oldValue, newValue, isLoading, isTemplate) {
2
3     if (isLoading || newValue === '') {
4         return;
5     }
6
7
8
9     //Type appropriate comment here, and begin script below
10
11    var Total = g_form.getvalue('u_total');
12
13    var Percentage = (Total/100)*100;
14
15    g_form.setvalue('u_percentage',Percentage+'%');
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7. Conclusion

Comprehensive **performance and testing** ensures the ServiceNow-based Education Management System is **robust, scalable, and user-friendly**. By combining functional, performance, usability, and regression testing, the system can reliably support students, teachers, and administrators, delivering accurate real-time insights while maintaining operational efficiency.