

## USA Staffing Assessment Standardization

August 2023

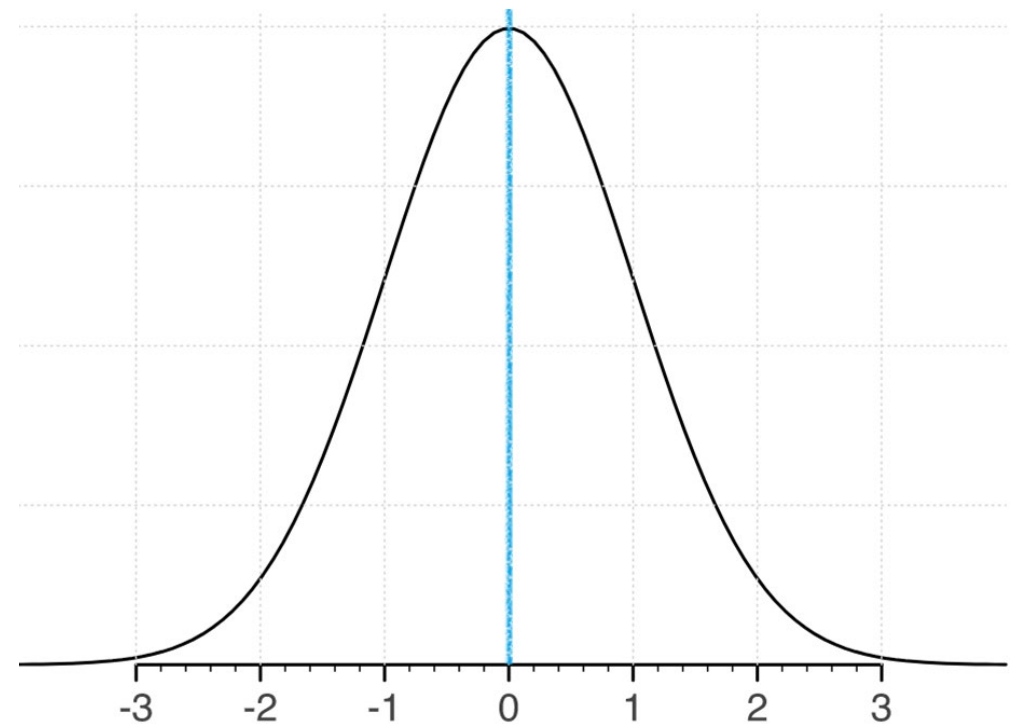


# Overview

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5. How are scores calculated when they *are* standardized?
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# What is score standardization?

- › The process of converting an assessment score to a common metric while considering how applicants performed **relative to each other**
- › Calculating a standardized score includes finding the **average score** and determining **how spread out** the applicant scores are from the average



# Why standardize scores?

Standardizing is a **best practice when comparing or combining scores** on two or more assessments.

Before comparing/combining two or more scores that are based on different scoring scales (e.g., 0 – 50 and 0 – 200), we first want to **make the scales more equal in meaning**. This involves more than simply putting the scores on the same scale, i.e., transmuting them to the 70 – 100 scale.

We also need to consider **how the scores are distributed**. In other words, what is the average score? How spread apart are the scores?

# When are scores standardized in USA Staffing?

Scores are standardized:

1. When using a **USA Hire** battery
2. When using a **Manual** assessment
3. When using **multiple rated AQs**

These 3 scenarios apply whether the assessments are all in Hurdle 1 (Default Hurdle) or across multiple hurdles.

# When are scores standardized in USA Staffing?

## 1. When using a **USA Hire** battery:

- USA Hire scores are ***always*** standardized
- When combining Assessment Questionnaire (AQ) scores with USA Hire, the ***AQ scores will also be standardized***

The screenshot displays the 'Assessments' configuration page. On the left, a table lists assessments for two rating combos (0201-11 and 0201-12). A blue arrow points from the 'Rated Assessment' row in the table to the configuration panel on the right. The configuration panel shows the 'Rating (Standardized)' toggle is turned on. A callout box with the text 'Indicator displays when AQ is standardized' points to this toggle. Other settings include 'Assessment Method' set to 'Training & Experience (Self Evaluation)', 'Rating Method' set to 'Weight-Based', and 'Scoring' set to 'Competency-level'. The 'Hurdle' is set to 'Hurdle 1: AQ + USA Hire'.

ID	Assessment Name	Assessment Type	Screen-out	Rating
61736	Standard USA Hire 0201-11 (Non-Supervisory) - PF2	External	<input type="checkbox"/>	<input checked="" type="checkbox"/>
61736	Rated Assessment	Questionnaire	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Indicator displays when AQ is standardized

# When are scores standardized in USA Staffing?

Vacancy 11822440 | Assessment Package | Announcement | Reviews

USAJOBS Announcement Title: HR Specialist | Pay Plan-Series-Grade: GS-0201-11/12 | Assessment ID: 61747

Assessment Information | Competencies | Passing Score Criteria | Checklist

### Assessment Information

Assessment Name \*  | Assessment Type \*  | Assessment ID \*

Screen-out |  Rating |  Passing Score

Owner \*  | Hurdle \*

### Assessment Rating Settings

Standardize scores |  Standardize using custom values

Series	Grade
0201 - Human Resources Management	11
0201 - Human Resources Management	12

## 2. When using a *Manual* assessment:

- Manual assessment scores are standardized if the HR user turns on the **Standardize scores** setting for the Manual assessment
- When combining AQ scores with a Manual assessment that has the **Standardize scores** setting turned on, the AQ scores will also be standardized

# When are scores standardized in USA Staffing?

## 3. When using *multiple rated AQs*:

- **Rating** checkbox is selected for more than one AQ within an Assessment Plan

The screenshot displays the 'Assessments' configuration page for an assessment plan. The page includes a navigation bar with tabs for 'Assessment Plan', 'Job Analysis', 'Settings', and 'Checklist'. Below the navigation, there are fields for 'Hurdles' and a table of 'Assessments'. The 'Assessments' table has columns for ID, Assessment Name, Assessment Type, Screen-out, Rating, Passing Score, Proportional Weight, and Percentage Weight. The 'Rating' column for two assessments is highlighted with a blue box, indicating that the 'Rating' checkbox is selected for both.

ID	Assessment Name	Assessment Type	Screen-out	Rating	Passing Score	Proportional Weight	Percentage Weight
72550	Rated Assessment 1	Questionnaire	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1 / 2	50%
72551	Rated Assessment 2	Questionnaire	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1 / 2	50%

# How does USA Staffing calculate scores when they're *not* standardized?

1. Calculate the **raw score** the applicant received for each assessment
2. **Transmute** applicant assessment raw scores to the 70 – 100 scale

## Transmutation Formula:

$$\text{Transmuted Score} = 70 + ((\text{Raw Score} - \text{Min Raw Score}) / (\text{Max Raw Score} - \text{Min Raw Score}) \times 30)$$

**Example:** Applicant scored 57 on a scale of 0 – 250.

$$\text{Transmuted Score} = 70 + (57/250 \times 30) = 76.84$$

**Note:** For AQ's, the Min Raw Score is always 0, unless a Passing Score is applied, in which case, the **Passing Score becomes the Min Raw Score**.

# How does USA Staffing calculate scores when they're *not* standardized? (Cont.)

3. If there are multiple rated assessments, **weight and combine** transmuted assessment scores to calculate hurdle/final score

## Weight and Combine Formula:

$$\text{Hurdle/Final Score}^* = (\text{Assessment 1 Transmuted Score} \times \text{Assessment 1 Percentage Weight}) + (\text{Assessment 2 Transmuted Score} \times \text{Assessment 2 Percentage Weight}) + \dots$$

\*For single-hurdle assessment packages, this formula results in the **Final Score**. For multi-hurdle assessment packages, this formula calculates the **Hurdle Score**, and the final score is calculated by applying the same weight/combine formula again to the hurdle scores.

# How does USA Staffing calculate scores when they *are* standardized?

1. Calculate the **raw score** the applicant received for each assessment
2. Calculate the assessment raw score **mean** (simple average) and **standard deviation** (this is a measure of how spread out the numbers are)
3. Calculate a **z-score** for each applicant assessment score
4. **Transmute** applicant assessment z-scores to the 70 – 100 scale
5. **Weight and combine** transmuted scores to calculate final score

# How does USA Staffing calculate scores when they *are* standardized? - Formulas

## Raw Score Mean:

*Raw Score Mean = Sum of all applicant raw scores divided by the total number of applicants*

## Standard Deviation:

*Standard Deviation = Square root of the average squared difference from the mean for each score*

## Z-Score Formula:

*Applicant Z-Score = (Raw Score – Mean Raw Score)/Raw Score Standard Deviation*

# Example: AQ + USA Hire

USA Staffing® Staffing Classification Recruit Admin Reports Search Go To Maria Ahmad - TEST

VACANCY 11636308

Vacancy 11636308 Assessment Package Announcement Applicant Overview Reviews

USAJOBS Job Title: Demo HR Specialist Pay Plan-Series-Grade: GS-0201-11/12 Announcement Type: ST Status: Complete Source: 20210212-MA-0001 (Copy)

Assessment Plan Job Analysis Settings Checklist Documents 1 Notes 0 History

### Assessments

Rating Combo: 0201-11 Hurdle 1: Default Stage

ID	Assessment Name	Proportional Weight	Percentage Weight	Mean Raw Score	Standard Deviation	Date Created
+	Standard USA Hire 0201-11 (Non-Supervisory) - PF2		50%			
50135	AQ	1 / 2	50%	1.5	1	2/12/2021 8:17 EST

Rating Combo: 0201-12

ID	Assessment Name	Assessment Type	Screen-out	Rating	Passing Score	Cut Score	Proportional Weight	Percentage Weight	Mean Raw Score	Standard Deviation	Date Created
-	Standard USA Hire 0201-12 (Non-Supervisory) - PF2	External					1 / 2	50%			
50141	Occupational Reading Assessment	External					167/1	16.7%	0	1	9/1/2022 13:17 EDT
50142	Occupational Judgment Assessment (G2)	External					333/1	33.3%	20.57	7.58	9/1/2022 13:17 EDT
50143	Occupational Interaction Assessment	External					333/1	33.3%	48.3	3.62	9/1/2022 13:17 EDT
50144	Occupational Reasoning Assessment	External					167/1	16.7%	0	1	9/1/2022 13:17 EDT
50135	AQ	Questionnaire					1 / 2	50%	1.714286	1.253566	2/12/2021 8:17 EST

**Weights applied for AQ and USA Hire battery (can be modified by HR user)**

**Weights, mean, and standard deviation values for USA Hire assessments within a battery (can't be modified by HR user)**

# Example: AQ + USA Hire

USA Staffing®

Staffing Classification Recruit Admin Reports Search

VACANCY 11636308

Application Number: AK5M9-LCIQ, Applicant: Maria Wetmore

Eligibilities and Ratings: Application Assessment

Rating Combo: 0201-12, Minimum Qualifications: ELTE - You are tentatively eligible

Veterans' Preference: Claimed (NV - No Preference Claimed)

### Rating Details for Maria Wetmore

0201-12 Minimum Qualification: ELTE Final Rating: 87 Category: Well Qualified

Assessment	Assessment MQ	Transmuted Rating	Raw Score
+ AQ	ELTE	90.128	3 (0 - 3)
- Standard USA Hire 0201-12 (Non-Supervisory) - PF2			
Assessment MQ: ELTE Transmuted Rating: 82.93137			
Assessment	Assessment MQ	Transmuted Rating	Raw Score
Occupational Reading Assessment	ELTE	88.027649	0.293976
Occupational Judgment Assessment (G2)	ELTE	84.747004	21
+ Occupational Interaction Assessment	ELTE	70	32.983333
Occupational Reasoning Assessment	ELTE	100	1.983253

Buttons: Save, Save & Close, Cancel

Augmented Rating: Eligible

# Example: AQ + USA Hire

Applicant Final Rating = AQ Transmuted Score x AQ % Weight + USA Hire Battery Score\* x USA Hire Battery % Weight

Applicant Final Rating = 90.128 x 0.5 + 82.93137 x 0.5

Applicant Final Rating = 45.064 + 41.465685

Applicant Final Rating (before rounding) = 86.529685

Applicant Final Rating (rounded) = 87

\*USA Hire Battery Score is calculated with the weight/combine formula, using the assessment transmuted scores and percentage weights for each assessment in the USA Hire battery.

# What are some factors to consider?

- Standardizing scores doesn't affect the **order** of applicant scores, i.e., applicants who performed better will still score higher than those who performed less well.
- However, depending on the assessments and applicant pool, **fewer applicants may score at the top of the 70 – 100 range** when scores are standardized.
- Agencies using a standardized assessment process for DE may wish to **consider adjusting category rating cutpoint values** to ensure enough candidates place in the highest quality category.
  - If needed, category cutpoint values may be adjusted after the announcement has been opened and applicants have applied (change is tracked in History and a banner message will display).

# What are some factors to consider when using USA Hire?

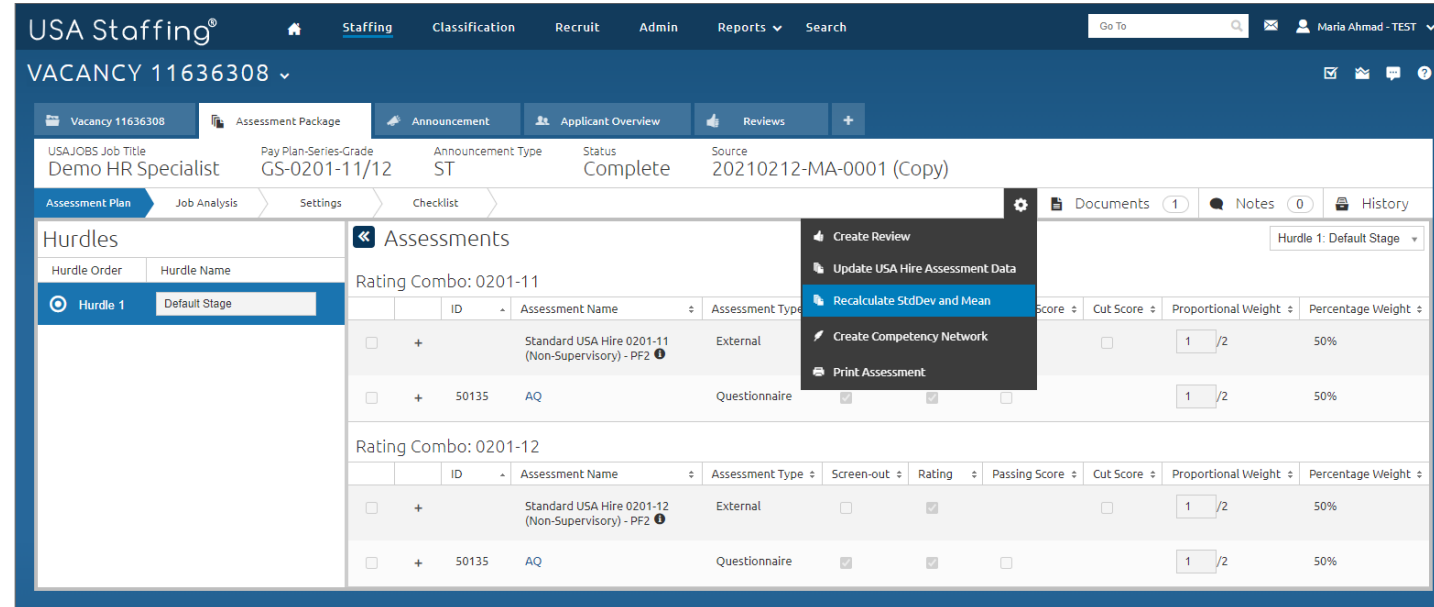
- When using an AQ for rating with USA Hire, the AQ mean and standard deviation values are calculated once the *announcement has closed*.
- Applicants will remain in a **PA status** even if they have already completed the USA Hire assessments until the JOA closes, since the AQ scores will need to be re-calculated at that point.
- As a result, we don't recommend using USA Hire with open-continuous announcements unless the USA Hire assessments will be the only ones used to rate applicants, i.e., AQ is used for screen-out only.

# What if I have invited late applicants?

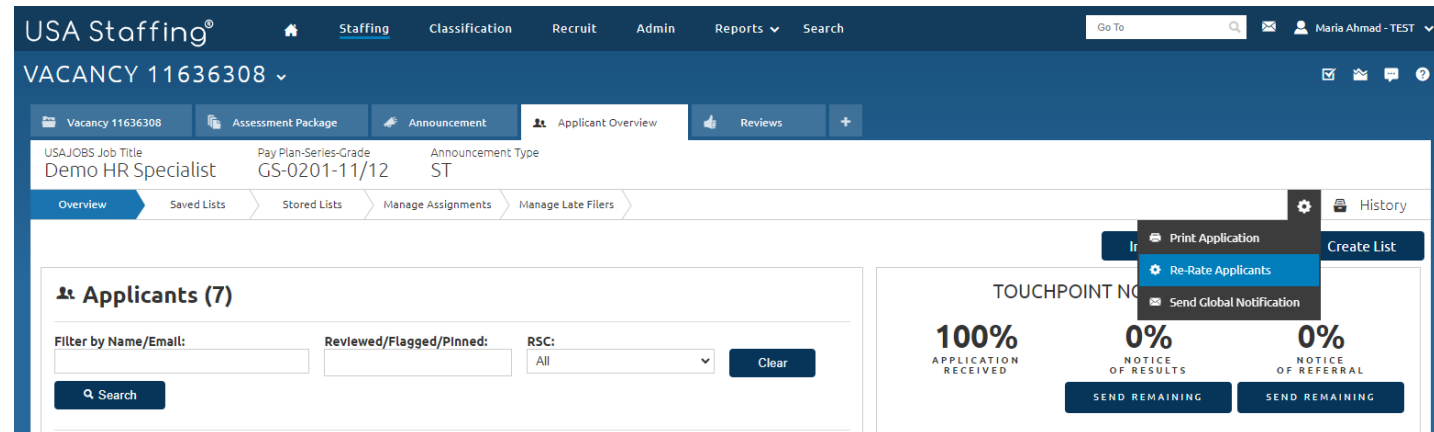
After the invited late application(s) are submitted:

1. From the Assessment Package gear menu, click **Recalculate StdDev and Mean**, and then
2. From the Applicant Overview gear menu, click **Re-Rate Applicants**

These steps will ensure *all* applicant scores are included in determining the standardized scores for the vacancy.



The screenshot shows the 'Assessments' section of the USA Staffing interface. The 'Assessment Package' tab is active, and the 'Assessments' sub-tab is selected. A gear menu is open, showing options: 'Create Review', 'Update USA Hire Assessment Data', 'Recalculate StdDev and Mean' (highlighted in blue), 'Create Competency Network', and 'Print Assessment'. The background shows a table of assessments with columns for ID, Assessment Name, Assessment Type, and various scores.



The screenshot shows the 'Applicant Overview' section of the USA Staffing interface. The 'Applicant Overview' tab is active, and the 'Manage Late Filers' sub-tab is selected. A gear menu is open, showing options: 'Print Application', 'Re-Rate Applicants' (highlighted in blue), and 'Send Global Notification'. The background shows a list of applicants and a summary card with statistics: '100% APPLICATION RECEIVED', '0% NOTICE OF RESULTS', and '0% NOTICE OF REFERRAL'.

# What are some factors to consider with Manual assessments?

- When determining if Manual assessment scores should be standardized, consider:
  - If the Manual assessment scores will be **combined** with another assessment,
  - The **size** of the applicant pool,
  - The level of **differentiation in scores** (e.g., if applicants scored roughly the same on the assessment), and
  - If the scores were **standardized** prior to loading them into USA Staffing.
- The **Standardize scores** setting can be adjusted after the announcement has been released/applicants have applied (change is tracked in History).
- The **Standardize using custom values** setting should only be used in coordination with an assessment professional (I/O psychologist).

# Where can I get additional info on scoring?

## USA Staffing Resource Center:

- Assessment Questionnaire:
- **Assessment Scoring and Weighting Decision Guide**
- **Federal Wage System Quick Reference Guide**
- Manual Assessments: **Manual Assessment User Guide**
- Passing Scores: **Assessment Passing Score FAQs**
- Multiple Hurdles: **Multiple Hurdles Guide**

## USA Hire Resource Center:

- **USA Hire User Guide**
- **USA Hire FAQs**



**Thank you!**