

# Issuer Operational Performance Profile (IOPP)

## User Instructions for Issuers

**Version 2.0**

*Last Updated June 14, 2017*



# Contents

---

- Objectives
- Overview
- Features and Reports
- Reports – Enhancement Impact
- IOPP: Log In
- IOPP: Overall Navigation and Display
- IOPP: Absolute vs. Relative Tier Scores
- IOPP: Summary Dashboard
- IOPP: Operational Dashboard
- IOPP: Default Dashboard
- IOPP: Metric Details
- Appendix

# Objectives

---

Upon reviewing these User Instructions, you will be able to:

- Navigate the IOPP tool
- Read and understand operational and default metrics
- Understand enhancements made to the IOPP tool

## Overview - Application

---

The IOPP application measures an Issuer's operational and default performance against their peers. This will improve Ginnie Mae's management capability and allow Issuers to better manage their performance.

The IOPP tool was designed to achieve these objectives:

- Enable our Issuer partners to better understand Ginnie Mae's expectations and what is important to Ginnie Mae.
- Provide Issuers with a framework and methodology from which they can gauge their effectiveness against a pre-determined set of Ginnie Mae expectations (metrics) as well as how they rank against their peers.
- Drive internal consistency in monitoring the business activities across the broader population of Ginnie Mae Issuers and lay the basis for providing constructive feedback to Issuers.
- Improve overall Issuer management through integrated and formalized processes and procedures that define and measure participant performance in Ginnie Mae programs.

## Overview – Enhancement

---

After IOPP's initial launch in 2015, enhancements were made to provide a more comprehensive view of Issuer performance data that is transparent and timely to the end user, resulting in a revamped user experience. More specifically, the IOPP Enhancements deployed in 2017 included the following:

- Incorporate new metrics into the IOPP scoring algorithm
- Allow Issuers to access intermediate values behind metric calculations
- Treat null metrics to be displayed as “N/A” as appropriate, and remove these values from consideration in relative tiering and overall score calculation
- Remove ultimate parent relationships to allow for Issuer-level scoring
- Hide metrics that are pending due to data unavailability
- Incorporate additional peer groups to include depository and non-depository classifications
- Incorporate absolute tier assignments that are based on Ginnie Mae predetermined thresholds
- Shorten the timeframe included in key operational metrics from 12 months to 3 or 6 months, depending on the metric
- Convert reports from SAP Business Objects Xcelsius to Web Intelligence format to improve performance and flexibility for future changes

## Features and Reports

---

The IOPP tool will have the following features and reports:

Name	Description
Summary	Displays the overall condition of the Issuer in regards to the quantitative tier for each operational metric and default metric.
Operational Metrics	Displays the overall tier and quantitative metric value for the operational metrics in the following categories: Platinum Standard (top 5 Issuers for that metric), Peer Group, and Issuer.
Default Metrics	Displays the overall tier and quantitative metric value for the default metrics in the following categories: Platinum Standard, Controlled Peer Group, and Issuer.

## Reports – Enhancement Impact

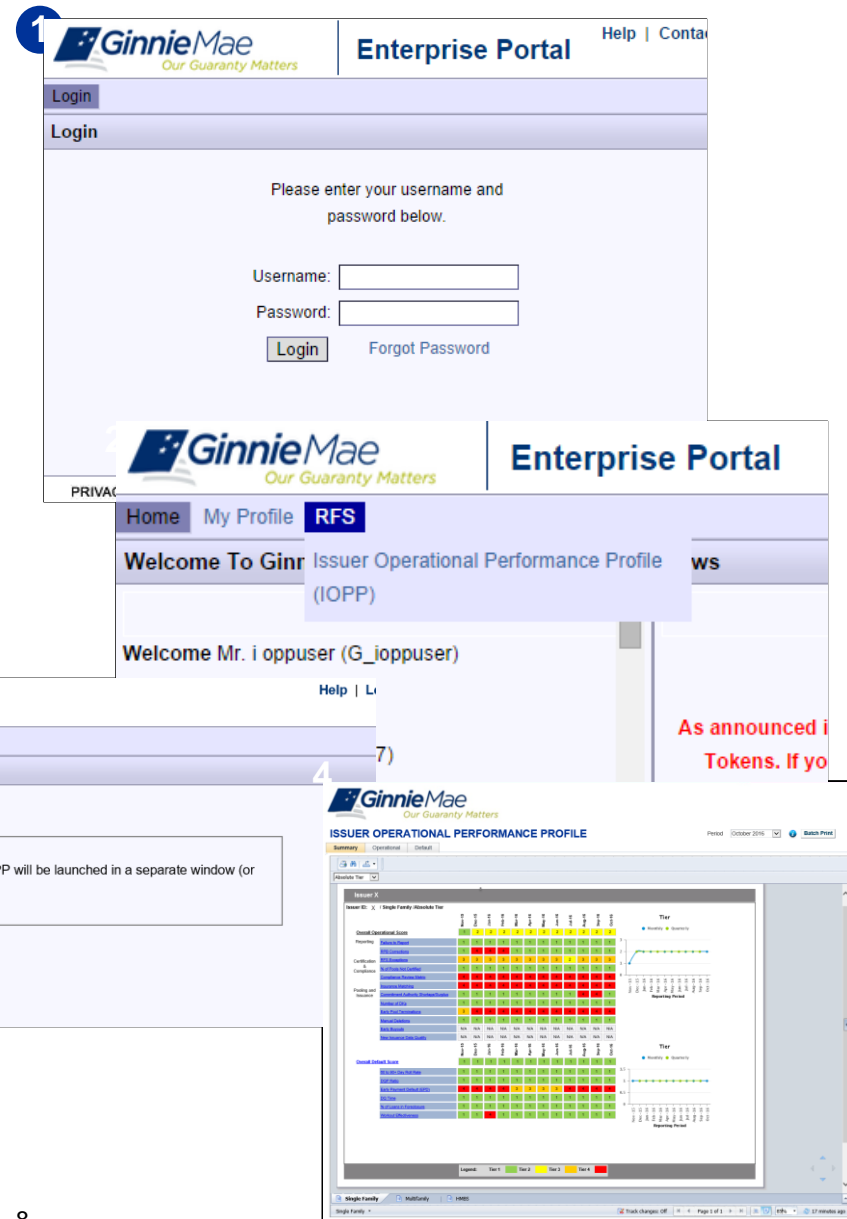
The following chart summarizes the impact of each enhancement item on the IOPP reports:

Enhancement Item	High-Level Requirement	Summary Page	Operational Page	Default Page
New Metrics in Scoring	Incorporate new metrics into the IOPP scoring algorithm	✓	✓	
Access Metric Details	Allow Issuers to access intermediate values behind metric calculations	✓	✓	✓
Treatment of Null Metrics	Treat null metrics to display null values as “N/A” as appropriate. Remove these values from consideration in relative tiering and overall score calculation	✓	✓	✓
Ultimate Parent Relationships	Remove ultimate parent relationships to allow for Issuer-level scoring	✓	✓	✓
Hide Pending Metrics	Hide metrics that are pending due to data unavailability	✓		✓
Additional Peer Groups	Incorporate additional peer groups to include depository and non-depository classifications for relative scoring	✓	✓	✓
Absolute Tier Assignments	Incorporate absolute tier assignments that are based on Ginnie Mae predetermined thresholds	✓	✓	✓
Shorten Timeframes	Shorten the timeframe included in key operational metrics from 12 months to 3 or 6 months, depending on the metric	✓	✓	
Overall Changes to Navigation and Display	Convert reports from SAP Business Objects Xcelsius to SAP Business Objects Web Intelligence format to improve performance and flexibility for future changes	✓	✓	✓

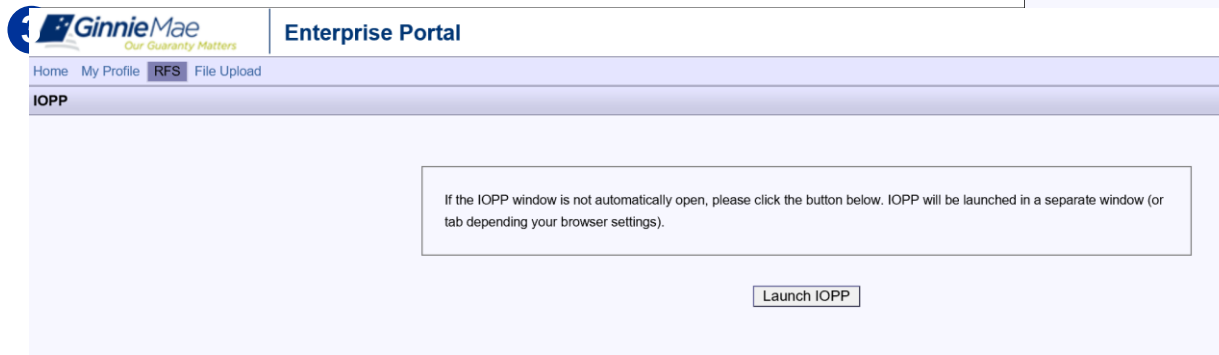
# IOPP: Log In

To log in to the tool:

1. Log in to the Ginnie Mae Enterprise Portal (GMEP) at <https://www.eginniemae.net>
2. From the RFS dropdown menu, select “**Issuer Operational Performance Profile (IOPP)**”.
3. On the resulting page, select “**Launch IOPP**”.
4. The user will then be able to see the Summary page.



The image shows a sequence of screenshots from the Ginnie Mae Enterprise Portal. The first screenshot shows the login page with a 'Login' button. The second screenshot shows the 'RFS' dropdown menu with 'Issuer Operational Performance Profile (IOPP)' selected. The third screenshot shows the 'Launch IOPP' button. The fourth screenshot shows the 'ISSUER OPERATIONAL PERFORMANCE PROFILE' summary page, which includes a table of scores and a line graph. A red text overlay on the right side of the fourth screenshot reads: 'As announced in... Tokens. If yo...'. A blue circle with the number '1' is in the top left corner of the first screenshot, and a blue circle with the number '4' is in the bottom right corner of the third screenshot.



This screenshot shows the Ginnie Mae Enterprise Portal interface. The top navigation bar includes 'Home', 'My Profile', 'RFS', and 'File Upload'. Below the navigation bar, the 'IOPP' section is visible. A text box contains the instruction: 'If the IOPP window is not automatically open, please click the button below. IOPP will be launched in a separate window (or tab depending your browser settings).' Below this text box is a 'Launch IOPP' button.



# IOPP: Overall Navigation and Display

1. Filter between Absolute and Relative Tier scores using the drop-down menu in the upper left corner of the page.
2. Select the desired reporting period in the upper right section of the page.
3. Navigate between program types using tabs at the bottom of the page.
4. Monthly and quarterly trend lines for scores are shown on single graph.
5. The report that is currently being viewed can be printed using the print icons in the upper left corner of the page.
6. To print the Summary, Operational, Default, and Metrics Details pages together, use the Batch Print button in the upper right corner of the page.
7. To select a report to view, use the tabs with the report names at the top of the page.

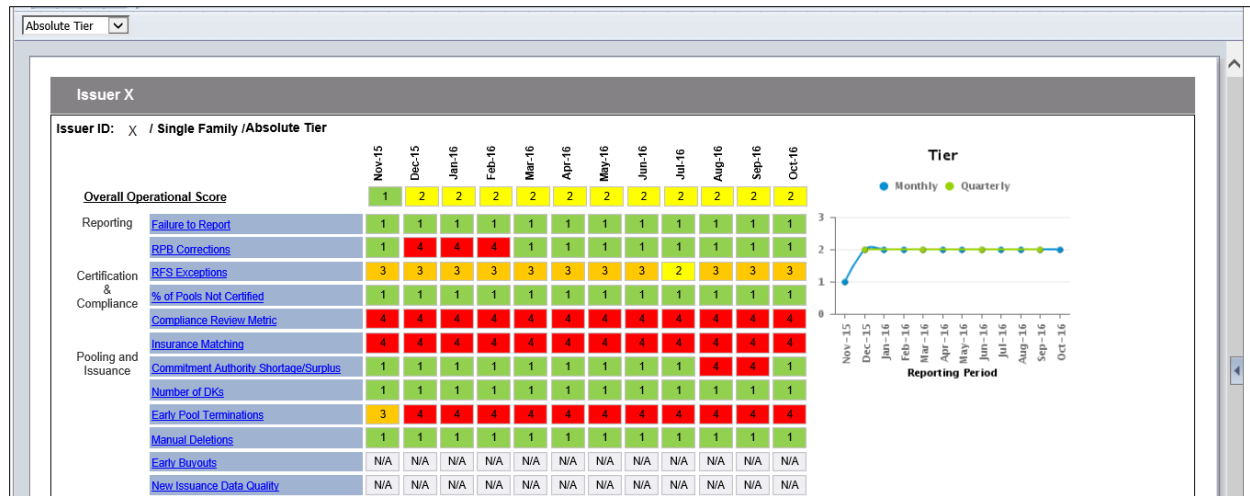
**Issuer X**  
Issuer ID: X / Single Family / Absolute Tier

	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16
<b>Overall Operational Score</b>	1	2	2	2	2	2	2	2	2	2	2	2
<b>Reporting</b>	1	1	1	1	1	1	1	1	1	1	1	1
Failure to Report	1	4	4	4	1	1	1	1	1	1	1	1
RPR Corrections	1	4	4	4	1	1	1	1	1	1	1	1
<b>Certification &amp; Compliance</b>	3	3	3	3	3	3	3	3	2	3	3	3
RFS Exceptions	3	3	3	3	3	3	3	3	2	3	3	3
% of Pools Not Certified	1	1	1	1	1	1	1	1	1	1	1	1
Compliance Review Metric	4	4	4	4	4	4	4	4	4	4	4	4
Insurance Matching	4	4	4	4	4	4	4	4	4	4	4	4
<b>Pooling and Issuance</b>	1	1	1	1	1	1	1	1	1	1	1	1
Commitment Authority Shortage/Surplus	1	1	1	1	1	1	1	1	1	1	1	1
Number of DIs	1	1	1	1	1	1	1	1	1	1	1	1
Early Pool Terminations	3	4	4	4	4	4	4	4	4	4	4	4
Manual Deletions	1	1	1	1	1	1	1	1	1	1	1	1
Early Buyouts	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
New Issuance Data Quality	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Overall Default Score</b>	1	1	1	1	1	1	1	1	1	1	1	1
90 to 90+ Day Roll Rate	1	1	1	1	1	1	1	1	1	1	1	1
DQP Ratio	1	1	1	1	1	1	1	1	1	1	1	1
Early Payment Default (EPD)	4	4	4	4	3	3	3	3	4	4	4	4
DQ Time	1	1	1	1	1	1	1	1	1	1	1	1
% of Loans in Foreclosure	1	1	1	1	1	1	1	1	1	1	1	1
Workout Effectiveness	1	1	4	1	1	1	1	1	1	1	1	1

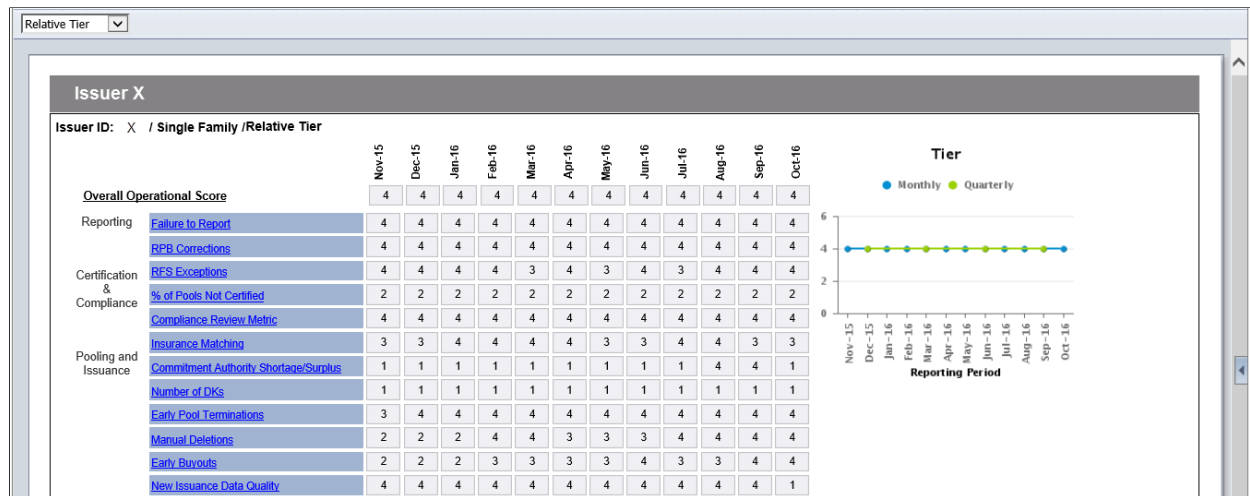
Legend: Tier 1 (Green), Tier 2 (Yellow), Tier 3 (Orange), Tier 4 (Red)

# IOPP: Absolute vs. Relative Tier Scores

Absolute Tier scores are calculated based on benchmarks defined by Ginnie Mae. Absolute Tier scores for a given Issuer are independent of all other Issuers. In IOPP dashboards, Absolute Tier scores are displayed using color coding.



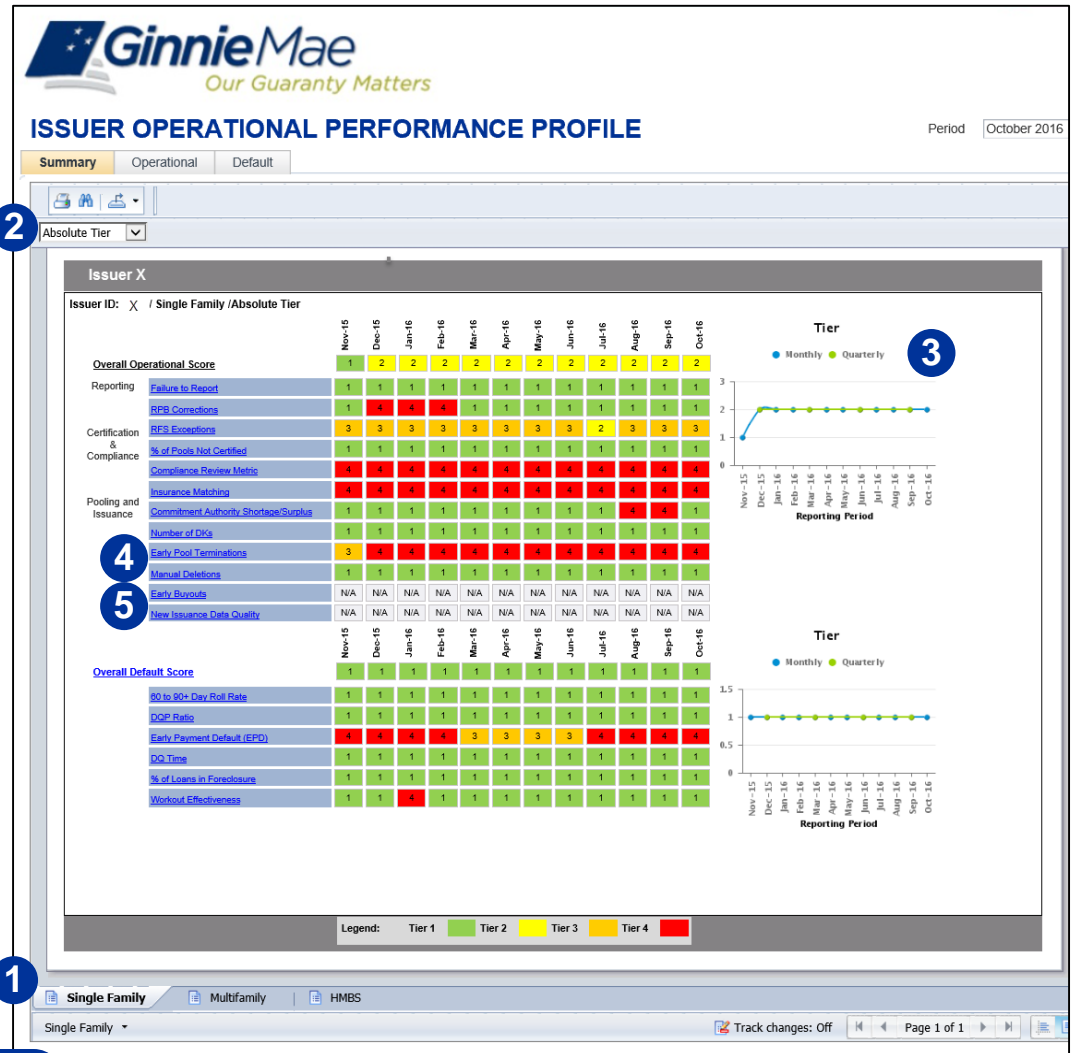
Relative Tier scores are calculated based on other Issuer scores within the same peer group. Tier cutoffs are determined by the quartiles of Issuer scores. Relative Tier scores are not displayed in color.



# IOPP: Summary Dashboard (1 of 2)

To view the Summary Dashboard:

1. The Summary page appears upon logging in to IOPP. The Program Type defaults to display Single Family. To change the Program Type, select the appropriate tab (Single Family, Multifamily, or HMBS). The applicable metrics will populate, including the overall operational score and overall default score. See appendix for overall score weights.
2. Scoring defaults to display Absolute Tier scores. To change the view to display Relative Tier scores, use the drop-down in the upper left corner of the page.
3. On the graph, the tier values can be viewed by both monthly and quarterly trend.
4. Hover over each metric to view the metric definition.
5. Select each metric to view intermediate calculations leading to tier values. Select "Overall Operational Score" or "Overall Default Score" to view details for all operational or default metrics. For a layout of metric details pages, see [Slide 16](#).



The Summary Dashboard displays the overall performance of the Issuer in regards to the tier for each Operational and Default Metric. This includes the overall Operational and Default scores.

# IOPP: Summary Dashboard (2 of 2)

6. Hover over each tier in the legend to view the criteria for the tier.
7. Press the 'Print' button to generate a PDF file of the Summary page, which can be saved or printed.

**ISSUER OPERATIONAL PERFORMANCE PROFILE**

Period: October 2016 Batch Print

**Summary** | Operational | Default

**Issuer X**  
 Issuer ID: X / Single Family / Absolute Tier

	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16
<b>Overall Operational Score</b>	1	2	2	2	2	2	2	2	2	2	2	2
<b>Reporting</b>												
Failure to Report	1	1	1	1	1	1	1	1	1	1	1	1
RFB Corrections	1	4	4	4	1	1	1	1	1	1	1	1
<b>Certification &amp; Compliance</b>												
RFS Exceptions	3	3	3	3	3	3	3	3	2	3	3	3
% of Pools Not Certified	1	1	1	1	1	1	1	1	1	1	1	1
<b>Compliance Review Metric</b>												
Insurance Matching	4	4	4	4	4	4	4	4	4	4	4	4
<b>Pooling and Issuance</b>												
Commitment Authority Shortage/Surplus	1	1	1	1	1	1	1	1	1	4	4	1
Number of DKs	1	1	1	1	1	1	1	1	1	1	1	1
Early Pool Terminations	3	4	4	4	4	4	4	4	4	4	4	4
Manual Deletions	1	1	1	1	1	1	1	1	1	1	1	1
Early Buyouts	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
New Issuance Data Quality	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Overall Default Score</b>	1	1	1	1	1	1	1	1	1	1	1	1
<b>90 to 90+ Day Roll Rate</b>	1	1	1	1	1	1	1	1	1	1	1	1
<b>DQP Ratio</b>	1	1	1	1	1	1	1	1	1	1	1	1
Early Payment Default (EPD)	4	4	4	4	3	3	3	3	4	4	4	4
<b>DQ Time</b>	1	1	1	1	1	1	1	1	1	1	1	1
% of Loans in Foreclosure	1	1	1	1	1	1	1	1	1	1	1	1
<b>Workout Effectiveness</b>	1	1	4	1	1	1	1	1	1	1	1	1

**Legend:** Tier 1 (Green) | Tier 2 (Light Green) | Tier 3 (Yellow) | Tier 4 (Red)

**6**

**7**

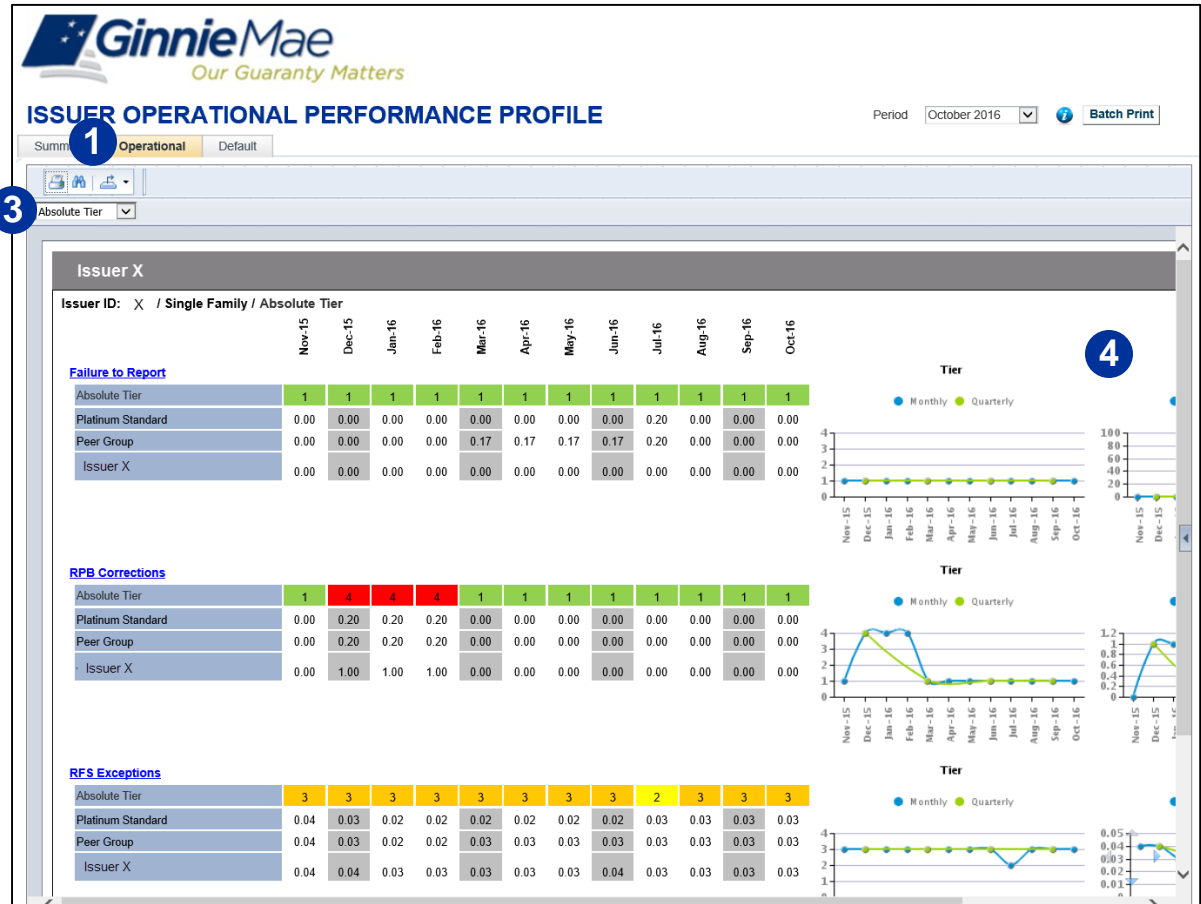
Single Family | Multifamily | HMBS

Page 1 of 1 | 85% | 17 minutes ago

# IOPP: Operational Dashboard (1 of 2)

To view the Operational Dashboard:

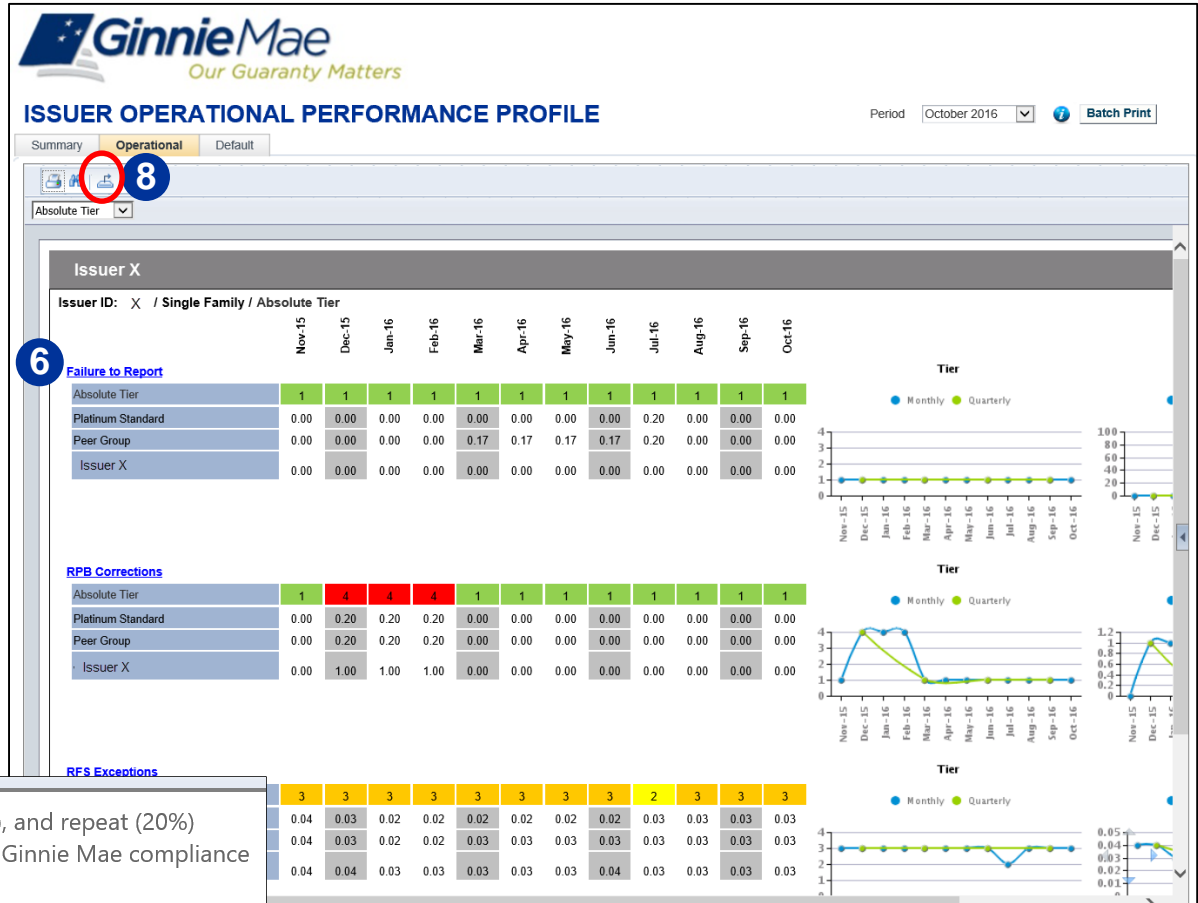
1. Select the 'Operational' tab at the top of the page.
2. The Program Type defaults to display Single Family. To change the Program Type, select the appropriate tab at the bottom of the page (Single Family, Multifamily, or HMBS). The applicable metrics will populate for the Issuer, as well as the Peer Group and Platinum Standard. See appendix for these calculations. (Program tabs shown in [Slide 9](#)).
3. Scoring defaults to display Absolute Tier scores. To change the view to display Relative Tier scores, use the drop-down in the upper left corner of the page.
4. On the graph, the Tier values can be viewed by both the metric trend and the tier trend, by either month or quarter.



The Operational Dashboard displays the overall tier and metric value for all Operational Metrics. These include Platinum Standard average, Peer Group average, and Issuer metric values.

# IOPP: Operational Dashboard (2 of 2)

5. Hover over each metric to view the metric definition.
6. Select each metric to view intermediate calculations leading to tier values. For a layout of the details page for a given metric, see [Slide 16](#).
7. Hover over the each tier in the legend to view the criteria for the tier (refer to [Slide 12](#))
8. Press the 'Print' button to generate a PDF file of the Operational Metrics dashboard.



**5**

Definition: Based on total (50%), high (30%), and repeat (20%) findings from the most recently completed Ginnie Mae compliance review.

Formula: Number of Total Findings \* (50%) + Number of High Findings \* (30%) + Number of Repeat Findings \* (20%). Taken From Most Recent Field Review.

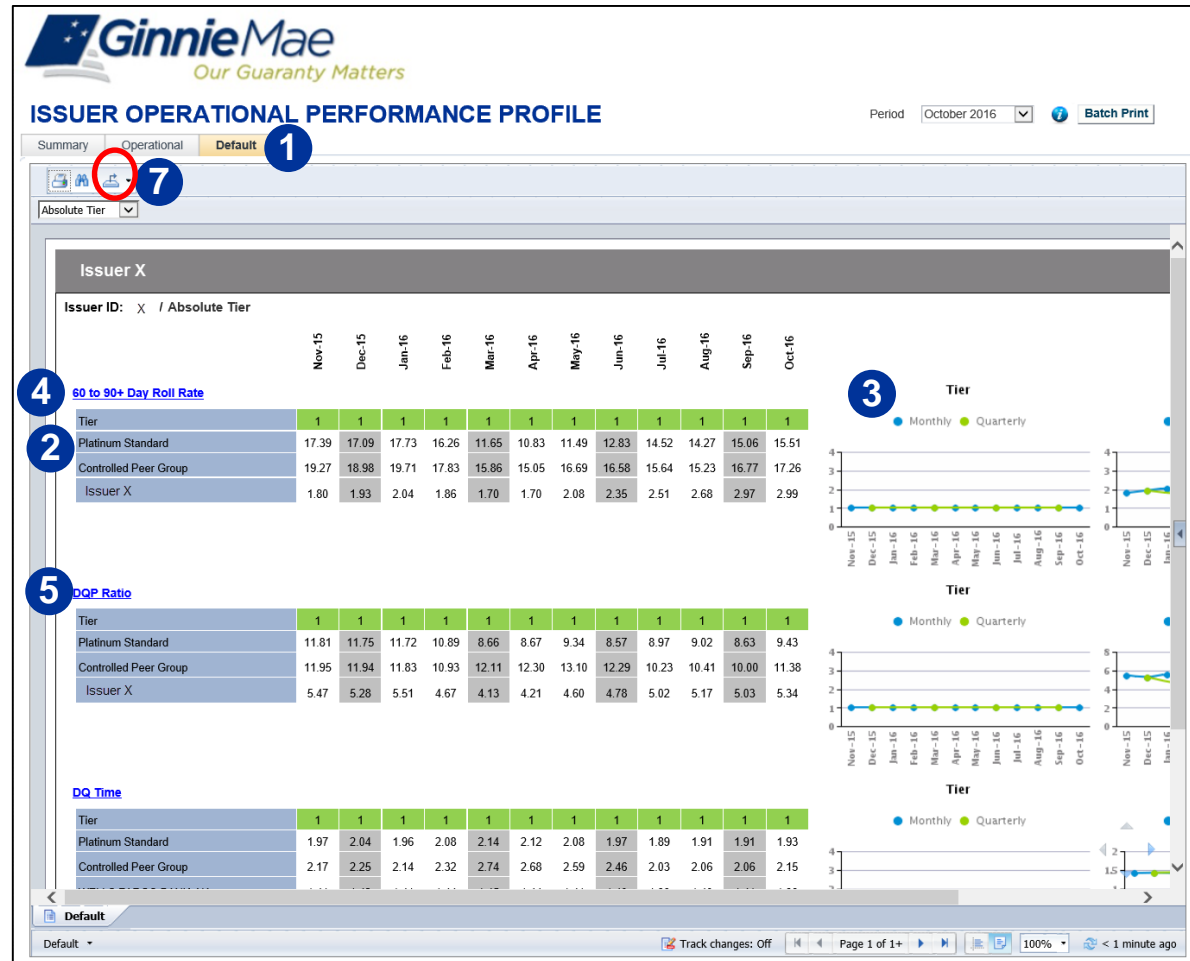
Compliance

- Compliance Review Metric
- Insurance Matching

# IOPP: Default Dashboard

To view the Default Dashboard (for SF Issuers only):

1. Select the 'Default' tab.
2. Default metric values for the Issuer will be displayed for the 12 month period. Additionally, Platinum Standard and Controlled Peer Group average will be shown. See appendix for calculations.
3. On the graph, the tier values can be viewed by both the metric trend and the tier trend, by either month or quarter.
4. Hover over each metric to view the metric definition.
5. Select each metric to view intermediate calculations leading to tier values. For a layout of the details page for a given metric, see [Slide 16](#).
6. Hover over the each tier in the legend at the bottom of the page to view the criteria for the tier. (Refer to [Slide 12](#)).
7. Press the 'Print' button to generate a PDF file of the Default Metrics dashboard.

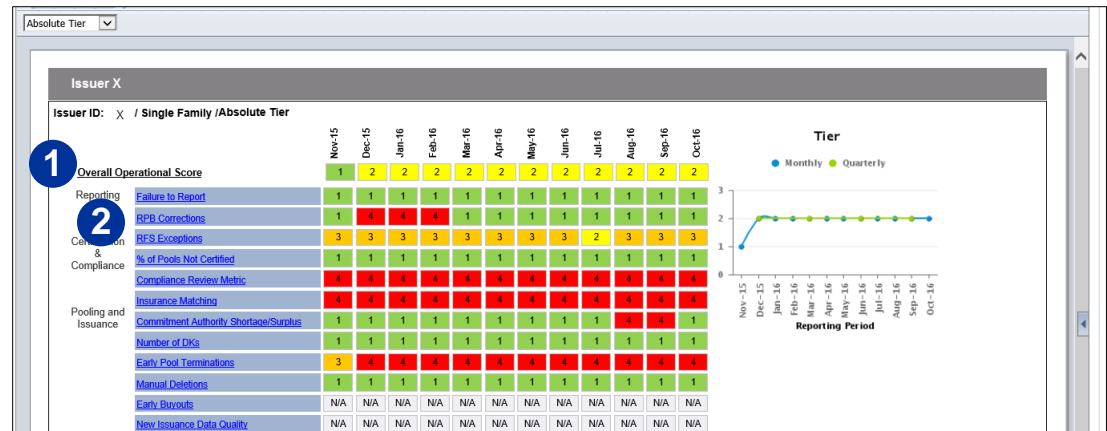


The Default Dashboard displays the overall tier and metric value for the Default Metrics. These include the Platinum Standard, Controlled Peer Group average, and Issuer metric values.

# IOPP: Metric Details

## To view Metric Details:

1. View all operational or default metric details on a single page
  - A page containing all operational metric details can be accessed by selecting “Overall Operational Score” from the Summary page
  - A page containing all default metric details can be accessed by selecting “Overall Default Score” from the Summary page
  
2. View details for a single metric:
  - A page containing the metric details for one given operational metric can be accessed by clicking on that individual metric either on the Summary or Operational Metrics page
  - A page containing the metric details for one given default metric can be accessed by clicking on that individual metric either on the Summary or Default Metrics page



## Metric Details Displayed upon clicking “RPB Corrections” Hyperlink:

**RPB Corrections**  
*If issuer failed to submit critical RPB corrections by the 4th business day or had a manual RPB correction after the 4th business day, the metric value is 1, else it is 0. Then summed over 3 month period.*

	Aug-16	Sep-16	Oct-16	Total
Critical RPB Corrections by 4th Business Day	0	0	0	0
Manual RPB Corrections after 4th Business Day	0	0	0	0
<b>IOPP RPB Corrections Metric</b>				0

Metric Details allow users to view the intermediate scores leading to overall metric calculations.



## Appendix: Definition of Operational Metrics (1 of 3)

The following slides define the Operational Metrics used within the IOPP tool and indicates the program types that consider each of these metrics.

Metric	Definition	Formula	Applicable Program(s)
Failure to Report	Failure to report remaining principal balance (RPB) or 10D through GinnieNet or to report Monthly Investor Reporting through RFS.	Number of times Issuer fails to report Monthly RFS Pool Reporting and Monthly Report Certification in a given month by the required deadlines, the Issuer will receive a "1". If the Issuer passes all in a given month, the issuer will receive a "0". This value is summed over the most recent 6-month period from the user-selected reporting period	SF, MF, HMBS
RPB Corrections	Binary metric for whether or not an Issuer has failed to submit critical RPB corrections timely or has had to submit manual RPB corrections after the 4th business day at least once during each month, summed over the most recent 3 month period.	If Issuer has failed to submit critical RPB corrections by the 4th business day OR if Issuer has had a manual RPB correction after the 4th business day in a given month, the Issuer will receive 1. Else it is 0. The metric will calculate a sum over the most recent 3 month period	SF, MF, HMBS
RFS Exceptions	The percentage of loans and pools with exceptions from RFS reporting.	$\begin{aligned} & (\text{Number of Pools with Errors and Critical Exceptions} / \text{Number of Active Pools}) * (30\%) + (\text{Number of Loans with Errors and Critical Exceptions} / \\ & \text{Number of Active Loans}) * (30\%) + (\text{Number of Pools with High, Medium and Low Exceptions} / \text{Number of Active Pools}) * (20\%) \\ & + (\text{Number of Loans with High, Medium and Low Exceptions} / \text{Number of Active Loans}) * (20\%) \end{aligned}$	SF, MF

## Appendix: Definition of Operational Metrics (2 of 3)

Metric	Definition	Formula	Applicable Program(s)
Compliance Review Metric	Based on total (50%), high (30%), and repeat (20%) findings from the most recently completed Ginnie Mae compliance review.	Number of Total Findings * (50%) + Number of High Findings * (30%) + Number of Repeat Findings * (20%). Taken From Most Recent Field Review.	SF, MF, HMBS
Number of Don't Knows (DKs)	The number of Don't Knows over a 12 month period. A DK is a failed transaction at the Federal Reserve due to incorrect account information.	Number of DKs in Past 12 Months / Number of Pools Issued in Past 12 Months	SF, MF, HMBS
Manual Deletions	Pools requiring a manual removal from GinnieNet due to varying circumstances.	Number of Manual Deletions in the Past 3 Months	SF, MF, HMBS
Disclosure Edits	Number of database corrections over a 3 month period.	Number of Corrections in Past 3 Months	MF
New Pool Errors	Number of errors at the time of pool submission over a 3 month period.	Number of Errors at Time of Pool Submission in Past 3 Months	MF
Insufficient Commitment Authority	Number of pooling errors due to insufficient commitment authority over a 3 month period.	Number of Pooling Errors Due to Insufficient Commitment Authority in Past 3 Months	MF
HRA Exceptions	The percentage of loans and pools with exceptions from HRA reporting.	$(\text{Total \# of Pool Exceptions} / \text{\# Pools Reported}) * (50\%) + (\text{Total \# of Loan Exceptions} / \text{\# Loans Reported}) * (25\%) + (\text{Total \# of Participation Exceptions} / \text{\# Participations Reported}) * (25\%)$	HMBS
Percentage of Pools not Certified	The percentage of pools not certified after 12 months.	Number of Pools Issued More Than 12 Months Ago Not Certified / Number of Pools Issued More Than 12 Months Ago	SF, HMBS

## Appendix: Definition of Operational Metrics (3 of 3)

Metric	Definition	Formula	Applicable Program(s)
Commitment Authority Shortage/Surplus	Percentage of commitment authority remaining over a 4 month window	Total commitment authority outstanding / Total 4 month usage	SF, HMBS
Insurance Matching	The percentage of loans that are found in agency endorsement guarantee data within 7 to 12 months of pool issuance.	Number of Matched Loans in Pools Issued 7 to 12 Months Ago / Number of Loans in Pools Issued 7 to 12 Months Ago	SF, HMBS
Early Pool Terminations	The number of Early Pool Terminations over a 12 month period.	Number of Early Pool Terminations in Past 12 Months / Number of Pools Issued in Past 12 Months	SF, HMBS
Failure to Purchase Participations when Mandatory Event Occurs	Number of participations related to a HECM not purchased when the outstanding principal balance of the related HECM equals or exceeds 98% of the maximum claim amount.	Number of Loans with UPB Greater Than 98% of Maximum Claims / Number of Loans	HMBS

# Appendix: Definition of New Operational Metrics

This slide defines the new metrics defined with the IOPP Enhancements. All new metrics are Operational Metrics.

Metric	Definition	Formula	Applicable Program(s)
Early Buyouts	The percentage of buyouts related to payoffs, loan substitutions, and other reasons compared to issuance activity over the past 6 months.	Number of loans liquidated due to reason codes 1,5, and 6 from loans that were issued within the past 6 months / Total issuances over the past 6 months	SF
New Issuance Data Quality	The percentage of instances flagged for exceeding data quality thresholds of new issuances as a percentage of loans issued over the past 6 months.	<p>Sum of number of loans in pools issued in the most recent 6 months where any of the following apply / Sum of number of loans in pools issued in the most recent 6 months.</p> <ul style="list-style-type: none"> <li>•Upfront MIP Rate is Invalid (FHA, Loan Purpose = 1 only) PLUS</li> <li>•Annual MIP Rate is Invalid (FHA, Loan Purpose = 1 only) PLUS</li> <li>•Credit Score in (100, 200) where Loan Purpose = 1 PLUS and Agency is not PIH</li> <li>•Debt to Income (DTI) &gt; 65% where Loan Purpose = 1 PLUS</li> <li>•Debt to Income (DTI) &lt; 10% where Loan Purpose = 1 PLUS</li> <li>•LTV &gt; CLTV PLUS</li> <li>•LTV &gt; 125 PLUS</li> <li>•LTV &lt; 10 PLUS</li> <li>•CLTV &gt; 200 PLUS</li> <li>•CLTV &lt; 10</li> </ul>	SF
Late Pool Re-certifications	Multifamily pools past due for re-certification following a servicing or document custodian transfer.	Number of Multifamily pools currently past due for re-certification	MF

## Appendix: Definition of Default Metrics (SF Only)

This slide defines the Default Metrics used within the IOPP tool. All Default Metrics apply to the Single Family program only.

Metric	Definition	Formula
60 to 90+ Day Roll Rate	The percentage of loans that move from at least 60 days delinquent to 90 or more days delinquent within a given period based on a rolling 3 month average.	Rolling 3 Month Average of (Number of DQ60 that Transition to DQ90 + / Number of Initial Period DQ60 Loans)
DQP Ratio	Amount of cumulative delinquent principal and interest (P&I) divided by monthly P&I for all pooled loans.	Sum of Cumulative Delinquent P&I / Sum of Monthly P&I
Early Payment Default (EPD)	The percentage of loans that become 60 days or more delinquent in the first 6 months.	Number of DQ60+ Loan in Pools Issued within Past 6 Months / Number of Loans in Pools Issued within Past 6 Months
DQTime	The average number of months that loans remain delinquent from the point of last paid installment.	Average of (Reporting Date - Last Payment Date) for all Delinquent Loans
Percentage of Loans in Foreclosure	The percentage of loans with a foreclosure status.	Number of Foreclosed Loans in Pools / Total Number of Loans in Pools
Workout Effectiveness	The percentage of loan modifications current after 6 months.	Number of Current (Non-Delinquent) Loan Modifications Pooled in Past 6 Months / Number of Total Loan Modifications Pooled in Past 6 Months

# Appendix: Weighting of Metrics for Overall Operational Scores

This slide define the weights used to calculate the overall Operational Issuer scores.

	Metric	Weight (SF)	Weight (HMBS)	Weight (Multifamily)
Reporting	Failure to Report	10%		
	RPB Corrections	25%		
	RFS Exceptions	5%	n/a	10%
	HRA Exceptions	n/a	5%	n/a
	Disclosure Edits	n/a		10%
	New Pool Errors	n/a		15%
Certification and Compliance	Percentage of Pools not Certified	10%		n/a
	Compliance Review Metric	10%		n/a
	Failure to Purchase Participations when Mandatory Event Occurs	n/a	10%	n/a
	Insurance Matching	10%		n/a
Compliance	Compliance Review Metric	n/a		10%
Pooling and Issuance	Commitment Authority Shortage/Surplus	5%		n/a
	Number of Don't Knows (DKs)	10%	5%	
	Early Pool Terminations	10%	5%	n/a
	Manual Deletions	5%		10%
	Insufficient Commitment Authority	n/a		5%

**New metrics are not assigned weights to be included in overall scores.**

# Appendix: Weighting of Metrics for Overall Default Scores

---

The following slides define the weights used to calculate the overall Default Issuer scores.

	Metric	Weight (SF)
Default Management (SF Only)	60 to 90+ Day Roll Rate	14.167%
	DQP Ratio	24.167%
	Early Payment Default (EPD)	14.167%
	DQTime	14.167%
	% of Loans in Foreclosure	19.167%
	Workout Effectiveness	14.167%

## Appendix: Additional Calculations

This slide defines the calculations for both Operational and Default metrics in IOPP.

Operational Metric Calculations	
Overall Relative Operational Metric Tier	Calculated by multiplying the individual tiers for each metric by the pre-determined weights for each metric, summing the results for each Issuer, and ranking the result into quartiles
Overall Operational Absolute Score	Calculated by multiplying the individual tiers for each metric by the pre-determined weights for each metric, summing the individual weighted scores by Issuer, dividing by the total weight, and rounding down to the nearest integer
Peer Group Average	Calculated by taking the average of all the Issuers' Scores in each Peer Group
Platinum Standard	Calculated by taking the average of the scores for the Top 5 Issuers in each Peer Group

Default Metric Calculations	
Overall Relative Default Metric Tier	Calculated by multiplying the individual tiers by the pre-determined weights for each metric, summing the results for each Issuer, and ranking the result into quartiles
Overall Default Absolute Score	Calculated by multiplying the individual tiers for each metric by the pre-determined weights for each metric, summing the individual weighted scores by Issuer, dividing by the total weight, and rounding down to the nearest integer
Platinum Standard	Calculated by taking the average of the scores for the Top 5 Issuers in each Peer Group
Controlled Peer Group Average	Calculated based on the process documented in the following slides



# Appendix: Metric Calculation: Peer and Control Groups

The following slides define the process through which peer and control groups are calculated.

## Step 1: Divide Issuers into Different Peer Groups based on Portfolio Size: Applied to Operational & Default Metrics

Program	Peer Groups
Single Family	<b>Mega:</b> Greater than 400,000 loans in portfolio
	<b>Large:</b> Greater than 75,000 and less than or equal to 400,000 loans in portfolio • <b>Depository and Non-Depository</b>
	<b>Medium:</b> Greater than 10,000 and less than or equal to 75,000 loans in portfolio • <b>Depository and Non-Depository</b>
	<b>Small:</b> Greater than 2,500 and less than or equal to 10,000 loans in portfolio • <b>Depository and Non-Depository</b>
	<b>Very Small:</b> Less than or equal to 2,500 loans in portfolio • <b>Depository and Non-Depository</b>
Multifamily	<b>Large:</b> Greater than \$5 Billion
	<b>Medium:</b> Greater than \$1 Billion and less than or equal to \$5 Billion
	<b>Small:</b> Greater than \$250 Million and less than or equal to \$1 Billion
	<b>Very Small:</b> Less than or equal to \$250 Million
HMBS	All <b>HMBS</b> Issuers

# Appendix: Metric Calculation: Peer and Control Groups

**Step 2:** Partition Loans into Different Buckets (Control Variables): Applied Only to Default Metrics (SF Issuers)

Peer Group	State/Region	Cohort	Purpose
Mega and Large	State: (AL, AK, AR, AZ, ... etc)	(2010 and after, 2007~2010, 2003~2007, prior to 2003)	(Purchase, Refinance, Modification, and N/A)
Medium and Small	Region: (Northeast, Atlantic, Southeast,... and etc)	(2010 and after, 2007~2010, 2003~2007, prior to 2003)	(Purchase, Refinance, Modification, and N/A)
Very Small	No control variables because portfolio size is too small to conduct a meaningful analysis		

# Appendix: Metric Calculation: DQP Ratio (Example: Large – Issuer X)

The following slides illustrate the process through which peer and control groups are calculated.

**Issuer X has Loans in 1,063 Buckets and here are some examples:**

Issuer X's Bucket Level Records	Bucket			Issuer's Loan Counts in a Bucket	Total Issuer's Loan Counts	Issuer's % of Loans [A]	DQP Ratio of Peers' Loans in Same Buckets [B]	[A] x [B]
	State	Cohort	Purpose					
	VA	2012	Purchase	190	237,109	0.08%	1.1%	0.001%
	VA	2012	Refinance	142	237,109	0.06%	3.7%	0.002%
	VA	2012	Modification	1399	237,109	0.59%	1.2%	0.007%
		o				o		o
		o				o		o
		o				o		o
	Total – All Buckets					100%		34.2%

Calculation Step	Definition
Issuer's % of Loans [A]	<ul style="list-style-type: none"> <li>% of loans in each bucket for Issuer X</li> <li>Sum of Issuer's % of Loans would be 100%</li> </ul>
DQP Ratio of Peers' Loans in Same Bucket [B]	<ul style="list-style-type: none"> <li>DQP Ratio of all Large Loans that are in each bucket, EXCEPT for Issuer X's Loans</li> <li>In this case, only Issuer Y and Issuer Z (2 out of 3 Large Issuers) Loans are used to compute the DQP Ratio in each bucket</li> </ul>
[A] x [B]	<ul style="list-style-type: none"> <li>(Issuer's % of Loans) X (DQP Ratio of Peer Group's Loans in a Bucket)</li> <li>Weighted average DQP Ratio of Peer Group, excluding Issuer X, where the weighting is based on Issuer X's distribution of loans across buckets</li> </ul>
Sum of [A] x [B]	<ul style="list-style-type: none"> <li>Equals Controlled Peer Group Average of DQP Ratio</li> </ul>

## Appendix: Metric Calculation: DQP Ratio (Example: Large – Issuer X)

Size Group	Issuer	Name	Loans	Number of Buckets	Issuer's DQP Ratio [A]	Peer Group Average DQP Ratio	Controlled Peer Group Average DQP Ratio [B]	Scored Ratio [A] / [B]	Issuer's Loans included in Calculation	Issuer's Buckets included in Calculation	Rank
Large	Y	Issuer	341,782	1,018	60.8%	25.9%	8.5%	7.19	100%	100%	1
Large	Z	Issuer	179,134	1,036	12.2%	25.9%	45.0%	0.27	100%	100%	2
Large	X	Issuer	237,109	1,063	6.0%	25.9%	34.2%	0.17	100%	100%	3

Calculation Step	Definition
Controlled Peer Group Average DQP Ratio	<ul style="list-style-type: none"> <li>Represents a Peer Group average that is adjusted for each Issuer's unique distribution of loans across the buckets.</li> <li>Excludes each Issuer's own loans from the calculation.</li> <li>In cases where an Issuer is the only one with loans in a particular bucket, the loans in that bucket are excluded from the calculation of the Controlled Peer Group Average DQP Ratio. The impact of this is shown in the two fields titled 'Issuer's Loans Included in Calculation' and 'Issuer's Buckets Included in Calculation.'</li> </ul>
Scored Ratio	<ul style="list-style-type: none"> <li>Ratio of Issuer's actual DQP Ratio to its Controlled Peer Group Average</li> </ul>
Rank	<ul style="list-style-type: none"> <li>Based on Scored Ratio (Higher the rank, Worse the performance)</li> </ul>