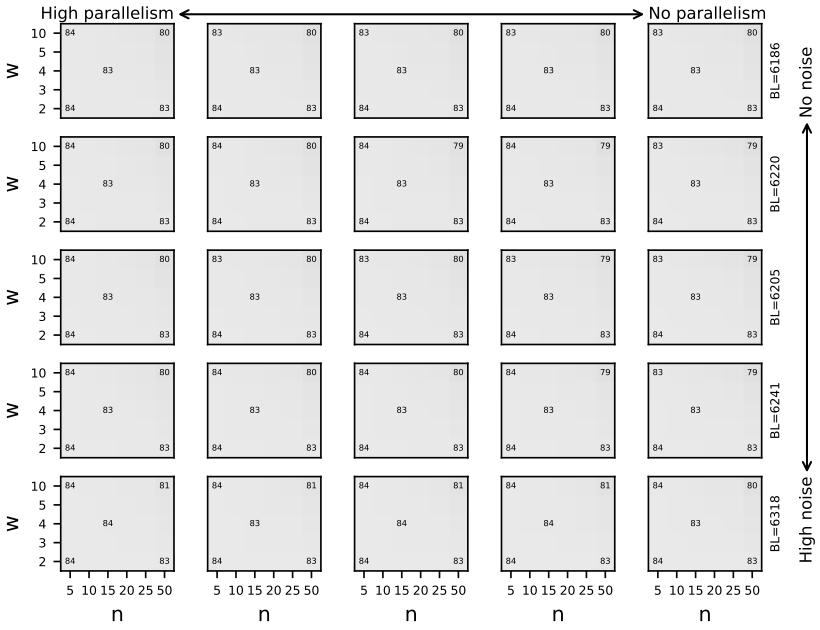
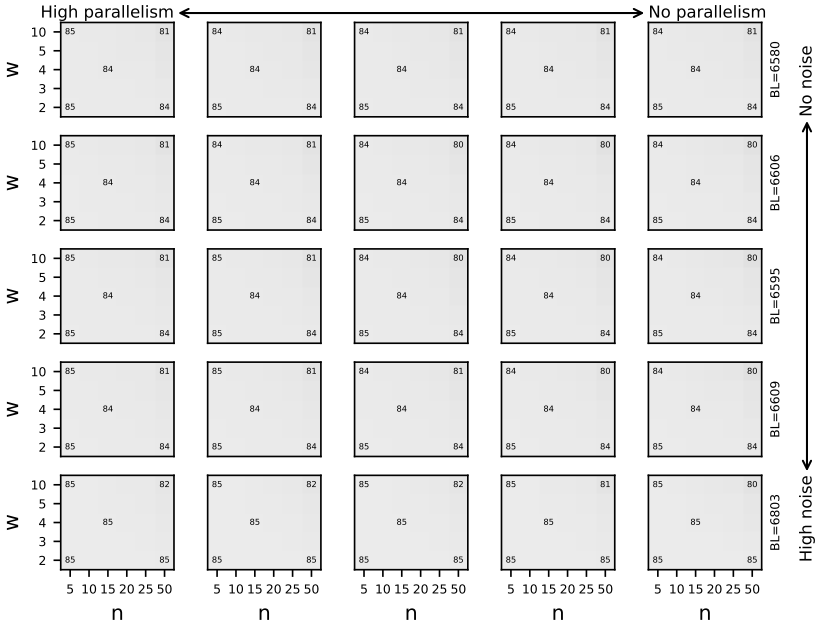
Appendix 6

.1 Bounding Both Cases and States with Carry-forward Marking and Cost($CFcs$).

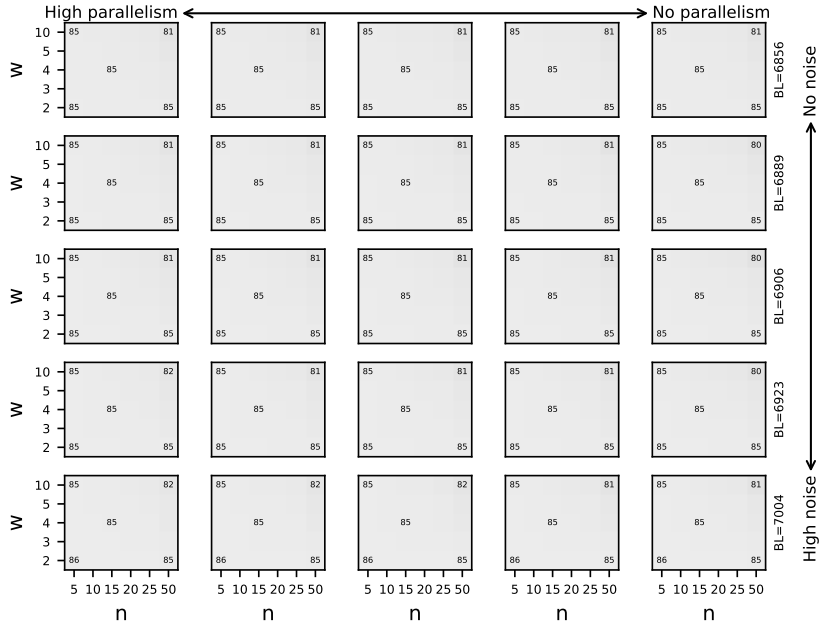
In this section, we provide the complete set of results for the experiments with $a12$, $a22$, and $a32$ synthetic events logs for the $CFcs$ stateful approach.



(a) Skewness of decisions level 0

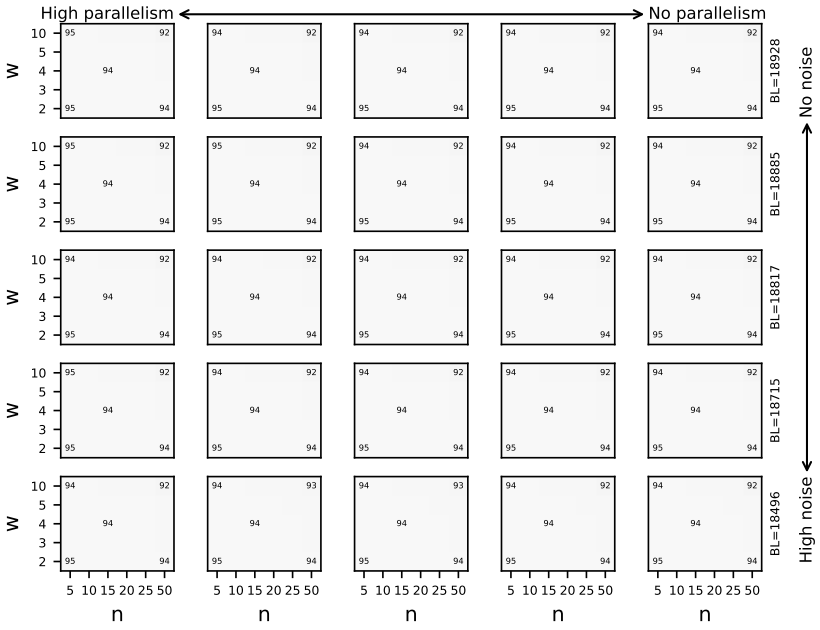


(b) Skewness of decisions level 1

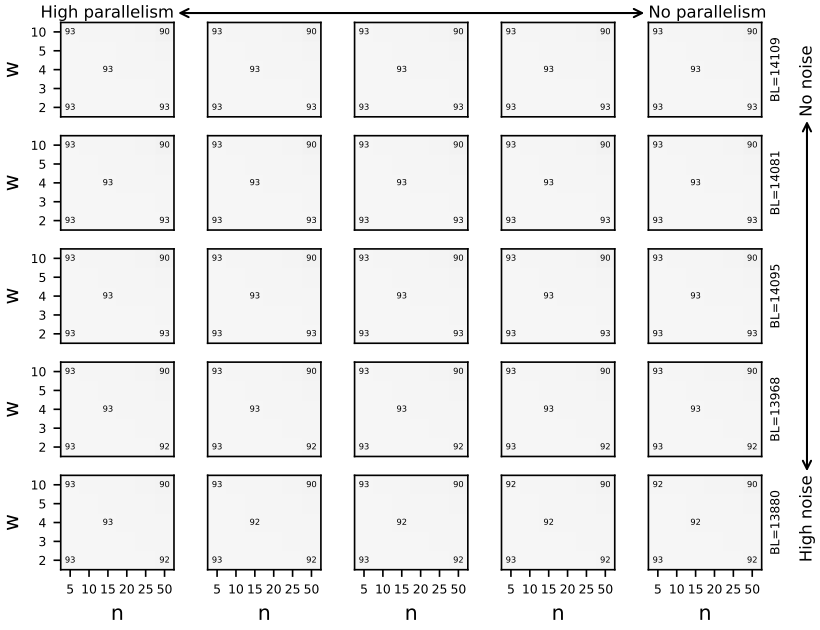


(c) Skewness of decisions level 2

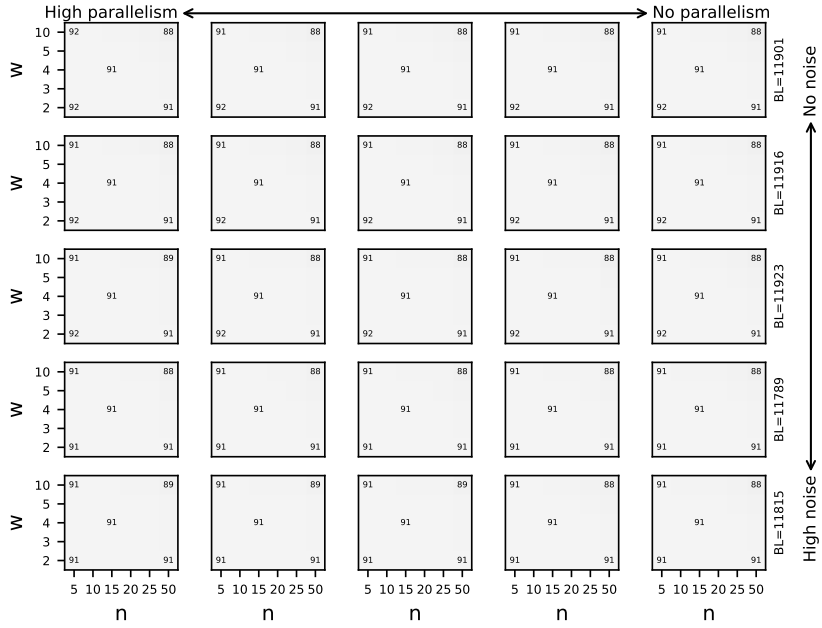
Figure 42: Percentage reduction in memory footprint w.r.t. the baseline (BL) for $a12$ event logs with different skewness of decisions and noise levels with $CFcs$ as a heatmap. A dark color represents the worst value of the respective metric, while brighter colors encapsulate its best values. The value w on the X-axis is the maximum number of states allowed to be retained in D_C. The number on the secondary Y-axis is the maximum states consumed by the baseline (BL).



(a) Skewness of decisions level 0

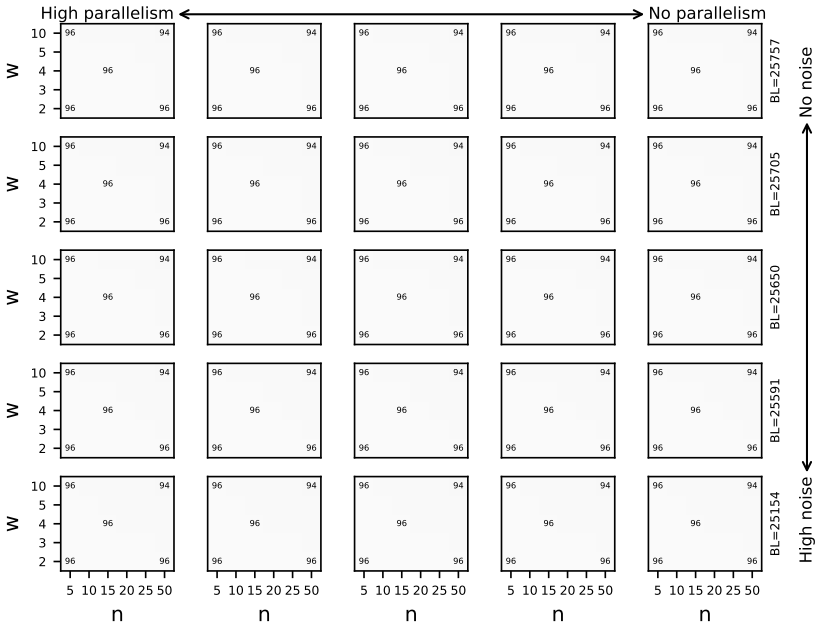


(b) Skewness of decisions level 1

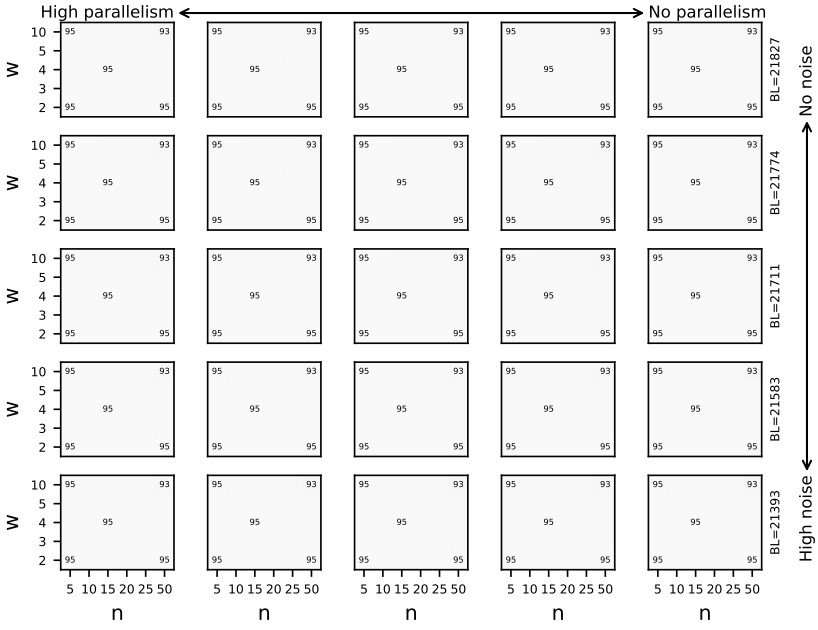


(c) Skewness of decisions level 2

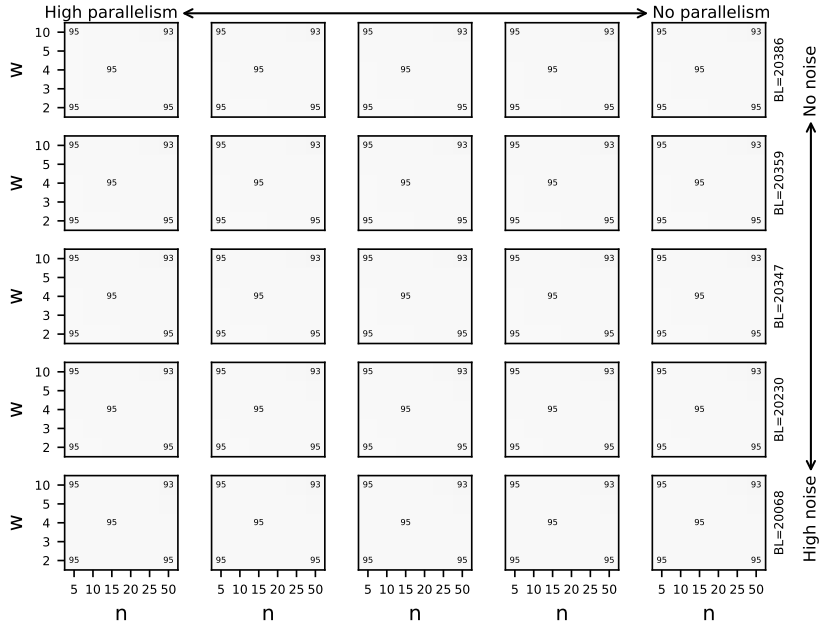
Figure 43: Percentage reduction in memory footprint w.r.t. the baseline (BL) for $a22$ event logs with different skewness of decisions and noise levels with $CFcs$ as a heatmap. A dark color represents the worst value of the respective metric, while brighter colors encapsulate its best values. The value w on the X-axis is the maximum number of states allowed to be retained in D_C. The number on the secondary Y-axis is the maximum states consumed by the baseline (BL).



(a) Skewness of decisions level 0

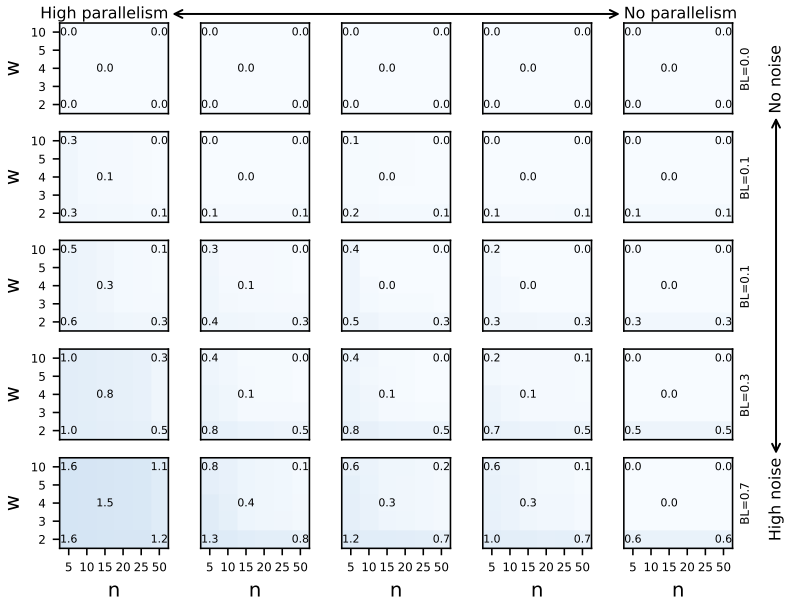


(b) Skewness of decisions level 1

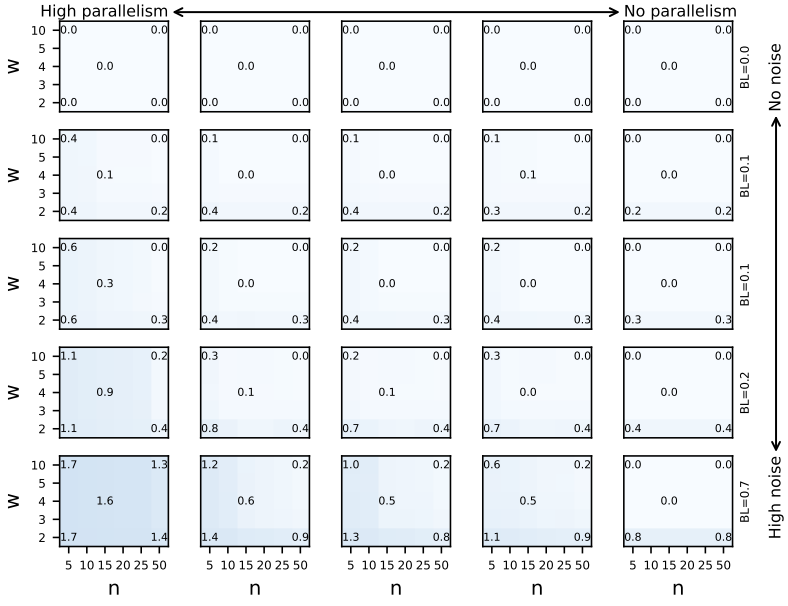


(c) Skewness of decisions level 2

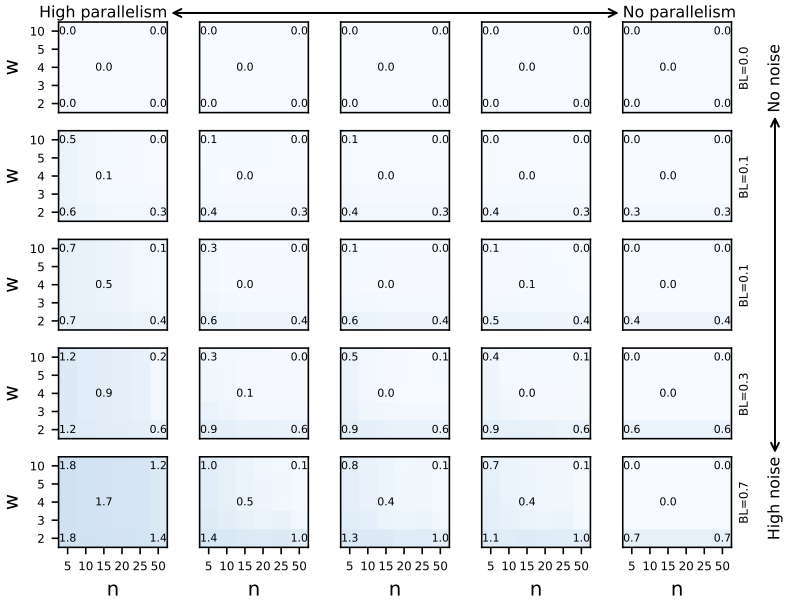
Figure 44: Percentage reduction in memory footprint w.r.t. the baseline (BL) for $a32$ event logs with different skewness of decisions and noise levels with $CFcs$ as a heatmap. A dark color represents the worst value of the respective metric, while brighter colors encapsulate its best values. The value w on the X-axis is the maximum number of states allowed to be retained in D_C. The number on the secondary Y-axis is the maximum states consumed by the baseline (BL).



(a) Skewness of decisions level 0

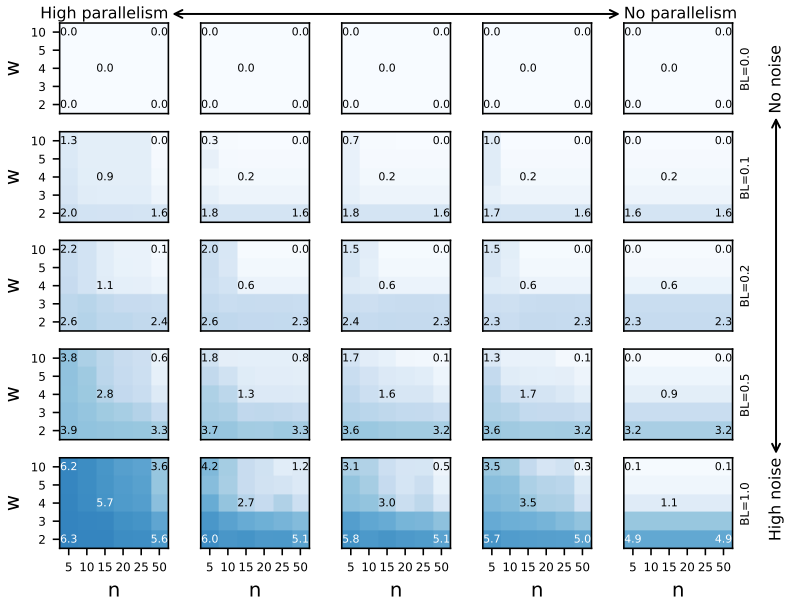


(b) Skewness of decisions level 1

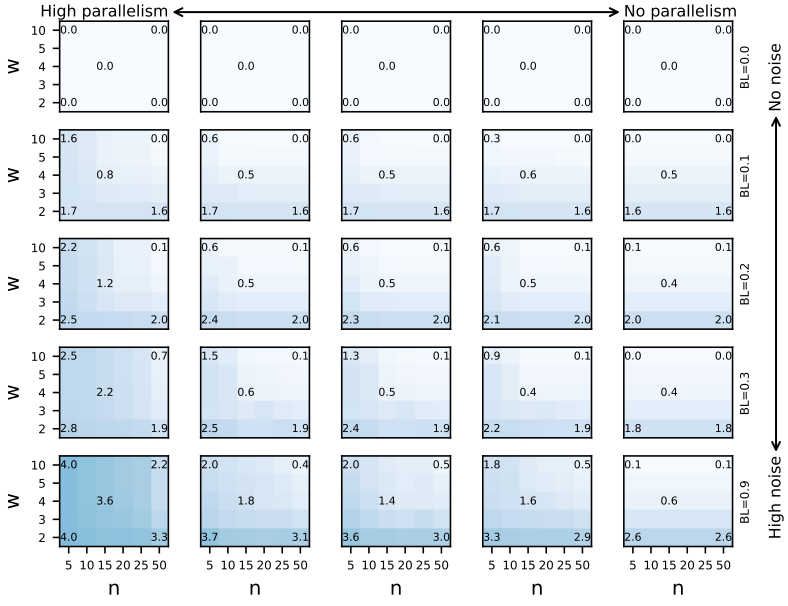


(c) Skewness of decisions level 2

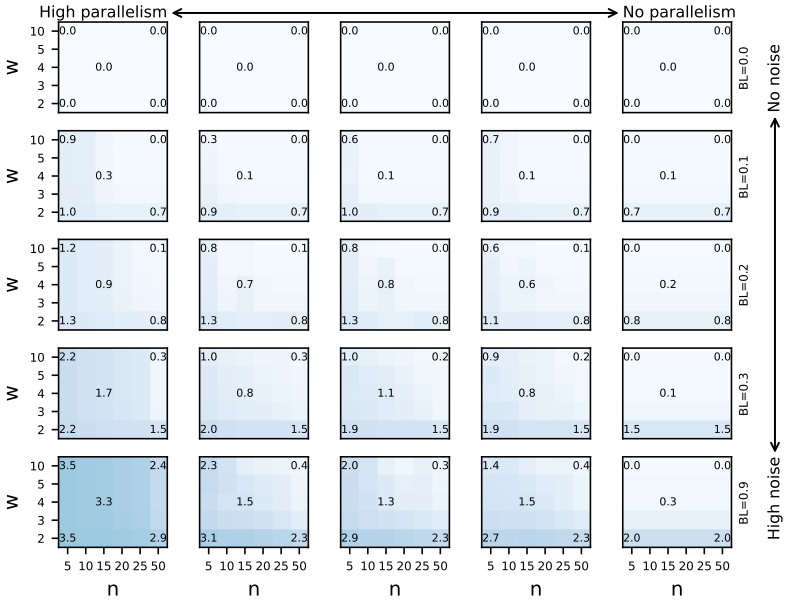
Figure 45: RMSE for $a12$ event logs with different decision skewness and noise levels with $CFcs$ as a heatmap. A dark color represents the worst value of the respective metric, while brighter colors encapsulate its best values. The number on the secondary Y-axis is the avg. trace fitness cost over the log by the baseline(BL).



(a) Skewness of decisions level 0

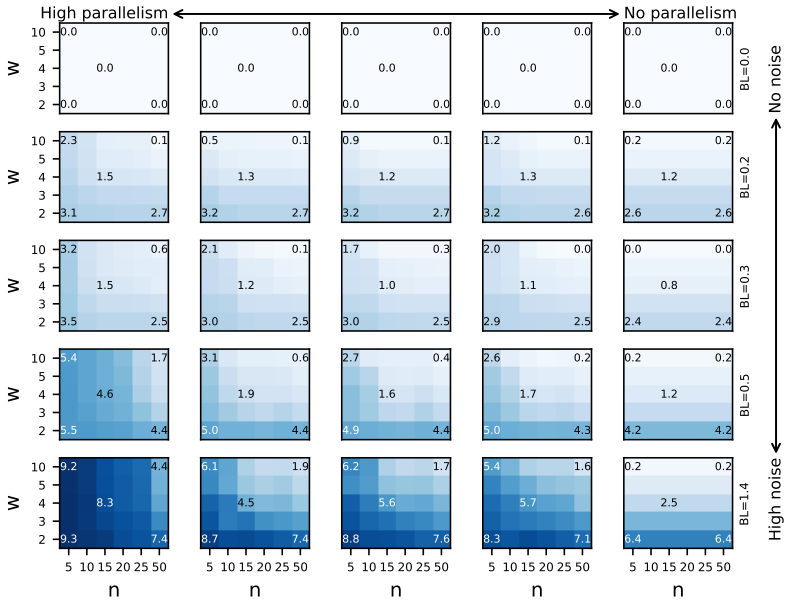


(b) Skewness of decisions level 1

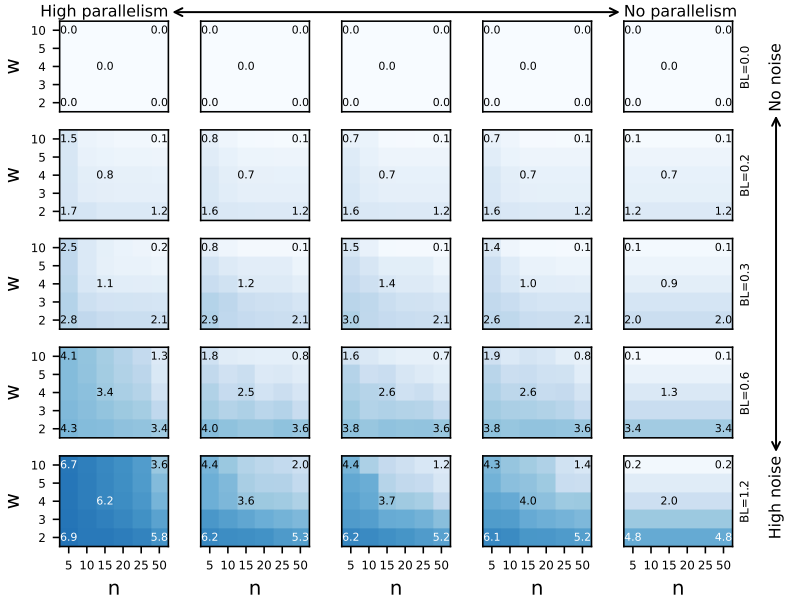


(c) Skewness of decisions level 2

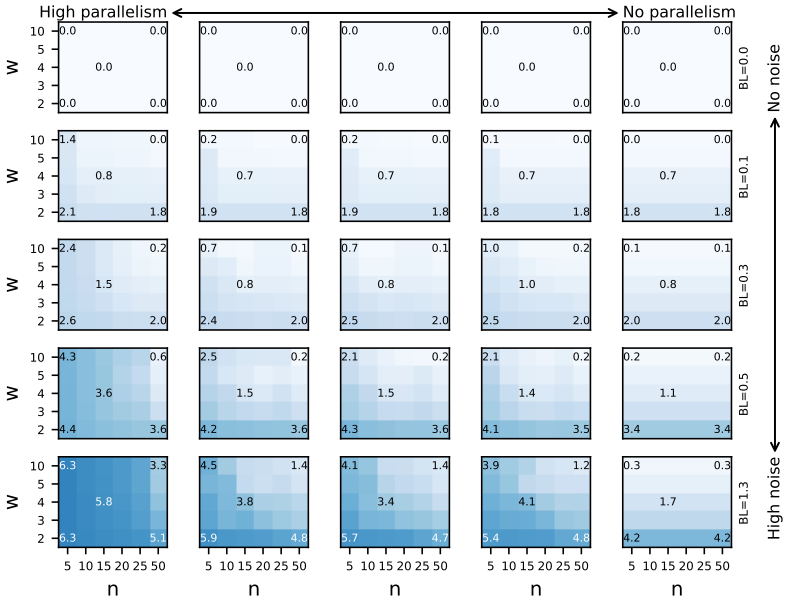
Figure 46: RMSE for $a22$ event logs with different decision skewness and noise levels with $CFcs$ as a heatmap. A dark color represents the worst value of the respective metric, while brighter colors encapsulate its best values. The number on the secondary Y-axis is the avg. trace fitness cost over the log by the baseline(BL).



(a) Skewness of decisions level 0

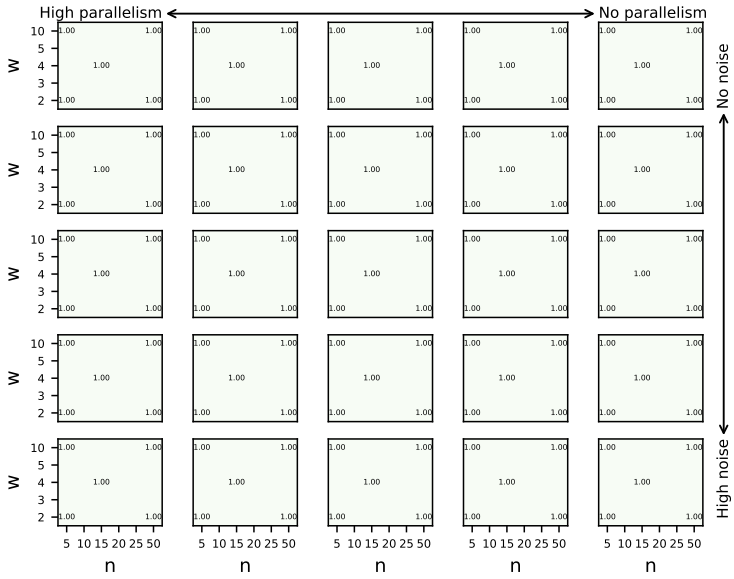


(b) Skewness of decisions level 1

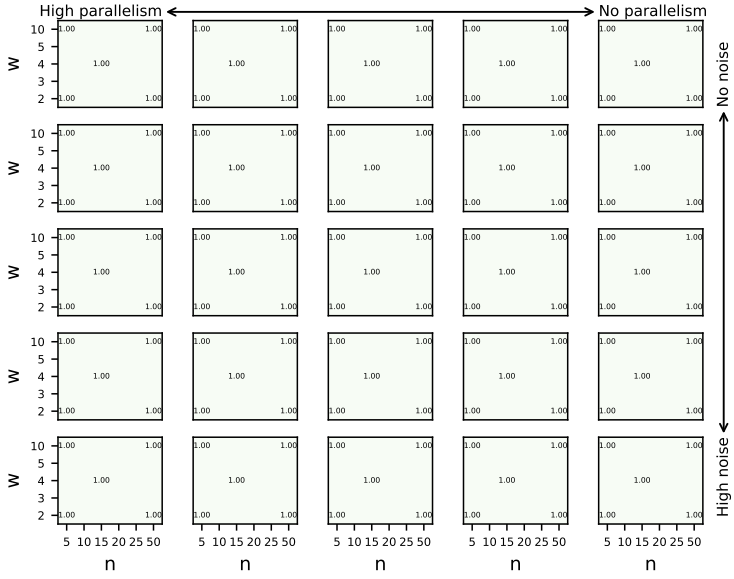


(c) Skewness of decisions level 2

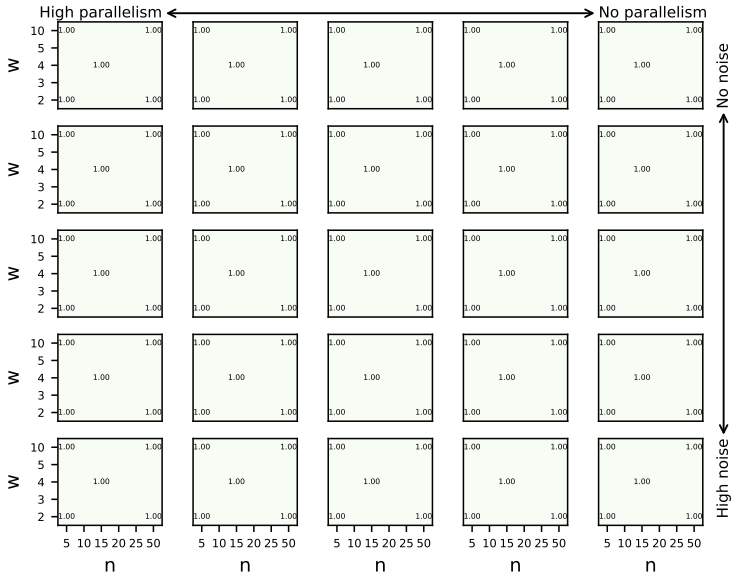
Figure 47: RMSE for $a32$ event logs with different decision skewness and noise levels with $CFcs$ as a heatmap. A dark color represents the worst value of the respective metric, while brighter colors encapsulate its best values. The number on the secondary Y-axis is the avg. trace fitness cost over the log by the baseline(BL).



(a) Skewness of decisions level 0

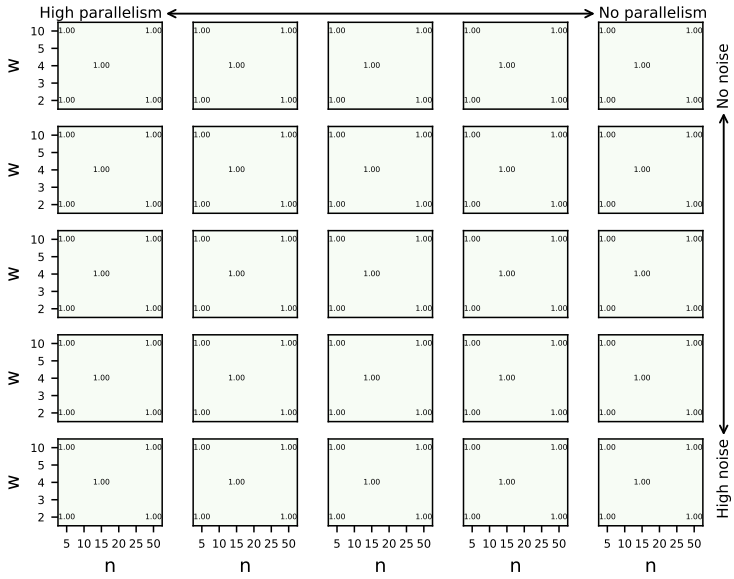


(b) Skewness of decisions level 1

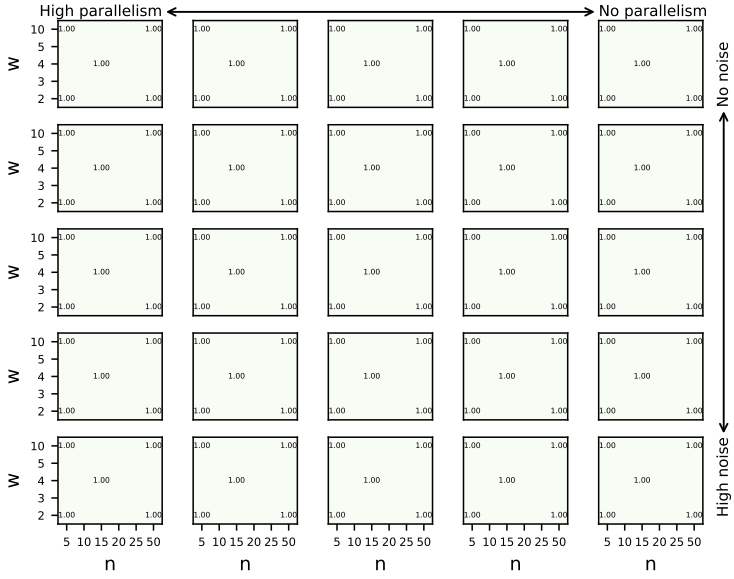


(c) Skewness of decisions level 2

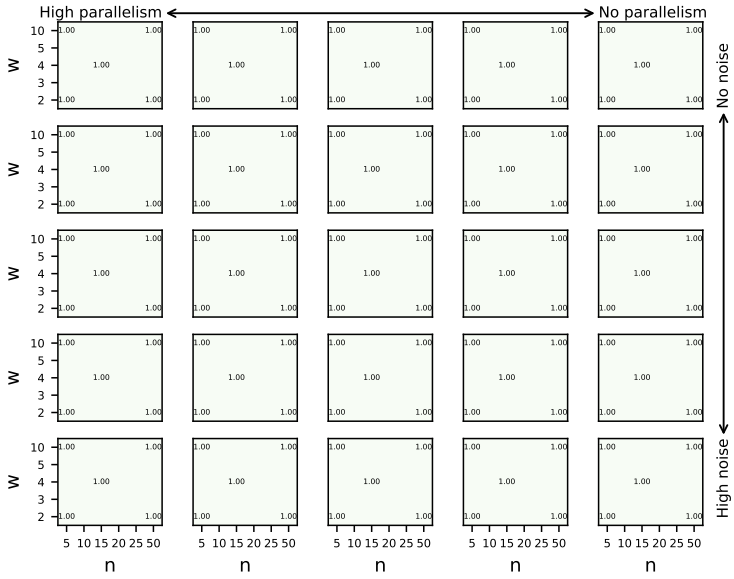
Figure 48: F_1 for $a12$ event logs with different decision skewness and noise levels with $CFcs$ as a heatmap. A dark color represents the worst value of the respective metric, while brighter colors encapsulate its best values.



(a) Skewness of decisions level 0

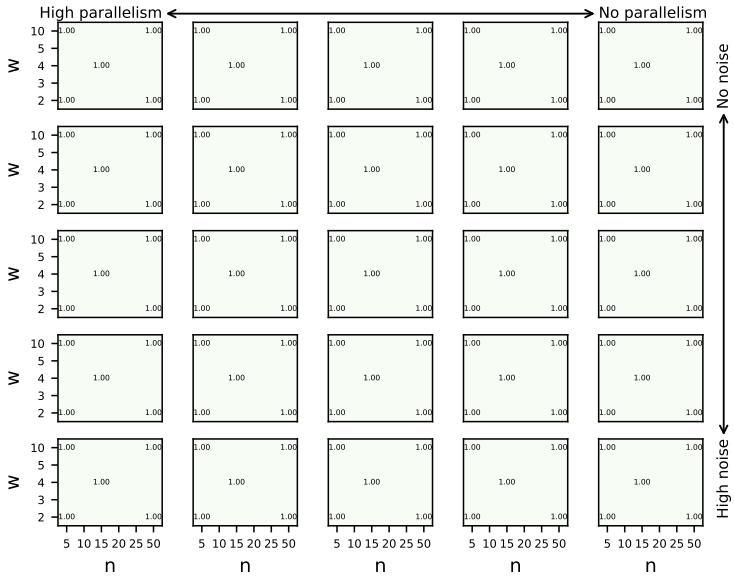


(b) Skewness of decisions level 1

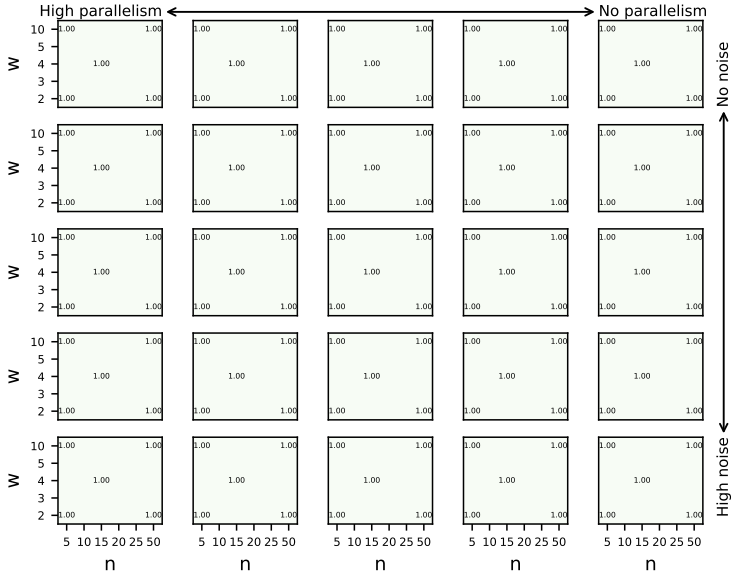


(c) Skewness of decisions level 2

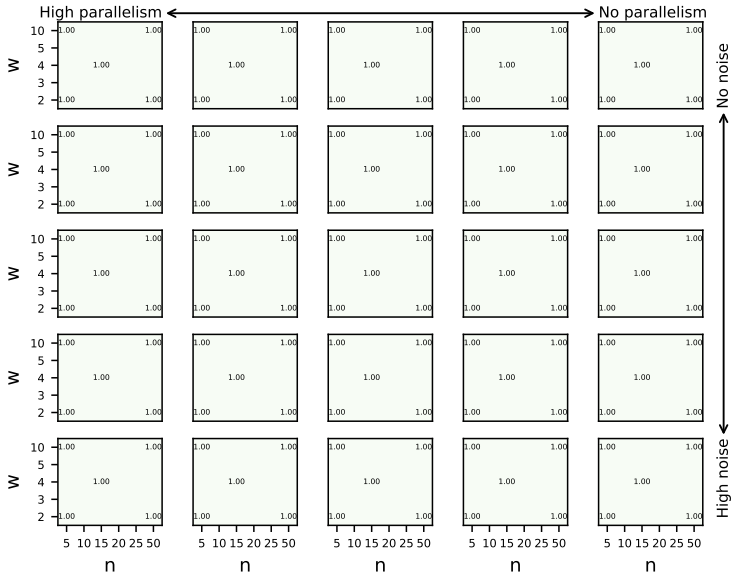
Figure 49: F_1 for $a22$ event logs with different decision skewness and noise levels with $CFcs$ as a heatmap. A dark color represents the worst value of the respective metric, while brighter colors encapsulate its best values.



(a) Skewness of decisions level 0



(b) Skewness of decisions level 1



(c) Skewness of decisions level 2

Figure 50: F_1 for $a32$ event logs with different decision skewness and noise levels with $CFcs$ as a heatmap. A dark color represents the worst value of the respective metric, while brighter colors encapsulate its best values.