

# CA Configuration Class Filter

## Overview

This report analyzes cellular automata configurations with different numbers of cells ( $N=4$  through  $N=8$ ), classifying each configuration based on rules 90 and 150.

**Input Format:** Rules: n1 n2 n3 ...

**Classification Types:** DC (Don't Care), I, II, III

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**N = 4**

### Configurations

1. **Rules:** 90 150 90 150

**Classes:** DC, II, I, DC

2. **Rules:** 150 150 90 150

**Classes:** DC, III, II, DC

### Summary

Configurations with Class II or V: 2

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**N = 5**

### Configurations

1. **Rules:** 150 150 90 90 90

**Classes:** DC, III, II, I, DC

2. **Rules:** 90 150 150 90 90

**Classes:** DC, II, I, III, DC

3. **Rules:** 150 150 150 90 90

**Classes:** DC, III, II, I, DC

4. **Rules:** 90 90 150 150 90

**Classes:** DC, II, I, III, DC

5. **Rules:** 150 150 150 150 90

**Classes:** DC, III, II, I, DC

6. **Rules:** 90 90 90 90 150

**Classes:** DC, II, I, II, DC

**7. Rules:** 150 150 90 90 150

**Classes:** DC, III, II, I, DC

**8. Rules:** 90 90 90 150 150

**Classes:** DC, II, I, II, DC

**9. Rules:** 90 90 150 150 150

**Classes:** DC, II, I, III, DC

**10. Rules:** 90 150 150 150 150

**Classes:** DC, II, I, III, DC

## Summary

**Configurations with Class II or V:** 10

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**N = 6**

## Configurations

**1. Rules:** 90 150 150 90 90 90

**Classes:** DC, II, I, III, III, DC

**2. Rules:** 150 90 150 90 150 90

**Classes:** DC, III, III, II, I, DC

**3. Rules:** 90 150 150 90 150 90

**Classes:** DC, II, I, III, III, DC

**4. Rules:** 90 90 90 150 150 90

**Classes:** DC, II, I, II, I, DC

**5. Rules:** 90 150 90 150 150 90

**Classes:** DC, II, I, II, I, DC

**6. Rules:** 150 90 150 150 150 90

**Classes:** DC, III, III, II, I, DC

**7. Rules:** 90 90 90 90 90 150

**Classes:** DC, II, I, II, I, DC

**8. Rules:** 150 90 150 90 90 150

**Classes:** DC, III, III, II, I, DC

**9. Rules:** 150 90 90 150 90 150

**Classes:** DC, III, III, III, II, DC

**10. Rules:** 90 150 90 150 90 150

**Classes:** DC, II, I, II, I, DC

**11. Rules:** 90 150 150 150 90 150

**Classes:** DC, II, I, III, II, DC

## Summary

**Configurations with Class II or V:** 11

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**N = 7**

## Configurations

**1. Rules:** 90 90 150 90 90 90 90

**Classes:** DC, II, I, III, III, III, DC

**2. Rules:** 150 90 90 150 90 90 90

**Classes:** DC, III, III, III, II, I, DC

**3. Rules:** 150 150 90 150 90 90 90

**Classes:** DC, III, II, I, III, III, DC

**4. Rules:** 90 150 150 150 90 90 90

**Classes:** DC, II, I, III, II, I, DC

**5. Rules:** 90 90 90 90 150 90 90

**Classes:** DC, II, I, II, I, III, DC

**6. Rules:** 90 150 90 90 150 90 90

**Classes:** DC, II, I, II, I, III, DC

**7. Rules:** 150 90 150 90 150 90 90

**Classes:** DC, III, III, II, I, III, DC

**8. Rules:** 150 150 150 90 150 90 90

**Classes:** DC, III, II, I, II, I, DC

**9. Rules:** 90 90 150 90 90 150 90

**Classes:** DC, II, I, III, III, III, DC

**10. Rules:** 90 150 150 90 90 150 90

**Classes:** DC, II, I, III, III, III, DC

**11. Rules:** 150 150 90 150 90 150 90

**Classes:** DC, III, II, I, III, III, DC

**12. Rules:** 90 150 150 150 90 150 90

**Classes:** DC, II, I, III, II, I, DC

**13. Rules:** 90 150 90 90 150 150 90

**Classes:** DC, II, I, II, I, III, DC

**14. Rules:** 150 150 150 90 150 150 90

**Classes:** DC, III, II, I, II, I, DC

**15. Rules:** 90 90 90 150 150 150 90

**Classes:** DC, II, I, II, I, III, DC

**16. Rules:** 90 150 90 150 150 150 90

**Classes:** DC, II, I, II, I, III, DC

**17. Rules:** 150 90 150 150 150 150 90

**Classes:** DC, III, III, II, I, III, DC

**18. Rules:** 90 150 90 90 90 90 150

**Classes:** DC, II, I, II, I, II, DC

**19. Rules:** 150 90 150 90 90 90 150

**Classes:** DC, III, III, II, I, II, DC

**20. Rules:** 150 150 150 90 90 90 150

**Classes:** DC, III, II, I, II, I, DC

**21. Rules:** 90 90 90 150 90 90 150

**Classes:** DC, II, I, II, I, II, DC

**22. Rules:** 150 90 150 150 90 90 150

**Classes:** DC, III, III, II, I, II, DC

**23. Rules:** 150 90 90 90 150 90 150

**Classes:** DC, III, III, III, III, II, DC

**24. Rules:** 90 90 150 90 150 90 150

**Classes:** DC, II, I, III, III, II, DC

**25. Rules:** 150 90 90 150 150 90 150

**Classes:** DC, III, III, III, II, I, DC

**26. Rules:** 150 150 90 150 150 90 150

**Classes:** DC, III, II, I, III, II, DC

**27. Rules:** 90 150 150 150 150 90 150

**Classes:** DC, II, I, III, II, I, DC

**28. Rules:** 90 90 90 150 90 150 150

**Classes:** DC, II, I, II, I, II, DC

**29. Rules:** 90 150 90 150 90 150 150

**Classes:** DC, II, I, II, I, II, DC

**30. Rules:** 150 90 150 150 90 150 150

**Classes:** DC, III, III, II, I, II, DC

**31. Rules:** 150 150 150 150 90 150 150

**Classes:** DC, III, II, I, III, III, DC

**32. Rules:** 150 90 90 90 150 150 150

**Classes:** DC, III, III, III, III, II, DC

**33. Rules:** 90 90 150 90 150 150 150

**Classes:** DC, II, I, III, III, II, DC

**34. Rules:** 90 150 150 90 150 150 150

**Classes:** DC, II, I, III, III, II, DC

**35. Rules:** 150 150 90 150 150 150 150

**Classes:** DC, III, II, I, III, II, DC

## Summary

**Configurations with Class II or V:** 35

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**N = 8**

## Configurations

**1. Rules:** 90 150 150 90 90 90 90 90

**Classes:** DC, II, I, III, III, III, III, DC

**2. Rules:** 150 150 150 150 90 90 90 90

**Classes:** DC, III, II, I, III, III, III, DC

**3. Rules:** 90 150 90 150 90 150 90 90

**Classes:** DC, II, I, II, I, II, I, DC

**4. Rules:** 150 90 150 150 90 150 90 90

**Classes:** DC, III, III, II, I, II, I, DC

**5. Rules:** 90 150 150 90 150 150 90 90

**Classes:** DC, II, I, III, III, II, I, DC

**6. Rules:** 150 90 90 150 150 150 90 90

**Classes:** DC, III, III, III, II, I, III, DC

**7. Rules:** 150 90 150 90 90 90 150 90

**Classes:** DC, III, III, II, I, II, I, DC

**8. Rules:** 150 150 90 150 90 90 150 90

**Classes:** DC, III, II, I, III, III, III, DC

**9. Rules:** 90 90 150 90 150 90 150 90

**Classes:** DC, II, I, III, III, II, I, DC

**10. Rules:** 150 150 90 150 150 90 150 90

**Classes:** DC, III, II, I, III, II, I, DC

**11. Rules:** 150 90 150 150 150 90 150 90

**Classes:** DC, III, III, II, I, III, III, DC

**12. Rules:** 150 150 150 150 150 90 150 90

**Classes:** DC, III, II, I, III, II, I, DC

**13. Rules:** 90 90 90 90 90 150 150 90

**Classes:** DC, II, I, II, I, II, I, DC

**14. Rules:** 90 90 150 150 90 150 150 90

**Classes:** DC, II, I, III, II, I, III, DC

**15. Rules:** 150 150 150 90 150 150 150 90

**Classes:** DC, III, II, I, II, I, III, DC

**16. Rules:** 150 150 90 90 150 90 90 150

**Classes:** DC, III, II, I, II, I, II, DC

**17. Rules:** 90 90 150 150 150 90 90 150

**Classes:** DC, II, I, III, II, I, II, DC

**18. Rules:** 90 150 90 90 90 150 90 150

**Classes:** DC, II, I, II, I, II, I, DC

**19. Rules:** 150 150 90 150 90 150 90 150

**Classes:** DC, III, II, I, III, III, II, DC

**20. Rules:** 90 90 150 90 150 150 90 150

**Classes:** DC, II, I, III, III, II, I, DC

**21. Rules:** 90 150 90 150 150 150 90 150

**Classes:** DC, II, I, II, I, III, II, DC

**22. Rules:** 150 90 90 150 90 90 150 150

**Classes:** DC, III, III, III, II, I, II, DC

**23. Rules:** 150 150 90 150 90 90 150 150

**Classes:** DC, III, II, I, III, III, III, DC

**24. Rules:** 90 150 90 90 150 90 150 150

**Classes:** DC, II, I, II, I, III, III, DC

**25. Rules:** 150 150 90 90 150 90 150 150

**Classes:** DC, III, II, I, II, I, II, DC

**26. Rules:** 150 90 150 90 150 90 150 150

**Classes:** DC, III, III, II, I, III, III, DC

**27. Rules:** 90 150 90 150 150 90 150 150

**Classes:** DC, II, I, II, I, III, III, DC

**28. Rules:** 90 150 150 150 90 150 150 150

**Classes:** DC, II, I, III, II, I, III, DC

**29. Rules:** 150 150 150 150 90 150 150 150

**Classes:** DC, III, II, I, III, III, II, DC

**30. Rules:** 90 90 90 90 150 150 150 150

**Classes:** DC, II, I, II, I, III, II, DC

**31. Rules:** 150 150 150 90 150 150 150 150

**Classes:** DC, III, II, I, II, I, III, DC

**32. Rules:** 90 150 90 150 150 150 150 150

**Classes:** DC, II, I, II, I, III, II, DC

## Summary

**Configurations with Class II or V:** 32

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## Overall Results Summary

N (Cells)	Total Configurations	Class II or V Count
4	2	2
5	10	10
6	11	11
7	35	35
8	32	32
<b>Total</b>	<b>90</b>	<b>90</b>