# Knight Capital · Incident Brief

**Andrew IDs:**

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Knight Capital used software to execute customers' stock trades. When a customer requested a quantity of shares, an order router split that request into smaller orders and sent them to markets. Read the incident below, then discuss what needed to change.

## What Happened

1. Knight stopped using its Power Peg functionality in 2003, but the code remained callable. A 2005 change moved quantity tracking out of that code path.
2. A 2012 release repurposed Power Peg's activation flag. Deployment reached seven of eight servers. The missed server remained in service.
3. Before the August 1 market opening, 97 error emails referenced Power Peg. They began around 8:01 a.m., before the 9:30 a.m. opening. The emails went unacted upon; responders also did not use them to diagnose the problem after opening.
4. When flagged requests arrived, seven servers processed them correctly. The missed server activated defective Power Peg code and continued sending orders after customer quantities were filled.
5. Incoming customer requests were checked earlier in the order-processing system. The router continued sending excess orders during the investigation.
6. While investigating in the live trading environment, responders removed the new code from the seven updated servers. This activated Power Peg there too and worsened the incident.
7. Over approximately 45 minutes, the router sent millions of orders. Knight ultimately lost more than $460 million. Executed trades remained even after the erroneous orders stopped.

Source: U.S. Securities and Exchange Commission, In the Matter of Knight Capital Americas LLC, October 16, 2013, paragraphs 1, 13–21, 26–27 (summarized).

# Knight Capital · What Needed to Change?

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Discuss the questions with your team. Consider the software, working practices, and incident response. Use evidence from the brief.

**1. Beyond the missed server, what weaknesses allowed this incident to happen?**

# Knight Capital · Prevention and Safeguards

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**2. What changes could have prevented it?**

**3. If something still went wrong, what safeguards could have limited the damage?**

Be ready to share one finding with the class.