cubic®

Clipper Executive Board Issues Review

Rick Bruce

Confidential & Proprietary

Agenda

- Account Migration
- Capacity Configuration
- Ticket Vending Machine
- Fare Inspection Device
- Customer Service Terminals
- Migration of Autoloads
- Monitoring
- Financial Settlement

cubic®

Account Migration

Problem	• Customer relationship management (CRM) application, website, and mobile traveler application have had On-Demand migration issues creating timeouts when processing • Some mobile users have invalid mobile cards that require deletion
Who's Impacted	• Active Clipper customers who have attempted migration
Solution/Timeline	• On-Demand Migration has been working consistently prevented timeouts since increased Customer Relationship Management application Cluster size on 1/13 • Plastic-to-mobile card conversion temporarily disabled in app on 1/7. No additional invalid mobile cards since implemented • Testing deletion of invalid mobile cards with Apple staff starting 1/26 • Update to migration application is currently with development to prevent the overflow of calls to system. Expected 1/29

Capacity and Configuration

Problem	• System slowness and timeouts
Who's Impacted	• Clipper customers • Call center customer service representatives • Station agents
Solution/Timeline	• Right-size Cubic Payment Application (CPA) and Network Information Service (NIS) servers (Completed 1/22) • Customer Relationship Management application updated to leverage Availability Zones (Completed 1/13) • Structured Query Language (SQL) servers need to be clustered (currently standalone instances) (2/11) • Virtual Token Management Reconfiguration (2/11)

Ticket Vending Machine

Problem	• SFMTA Ticket Vending Machine, when adding value to a legacy Clipper transaction is timing out • For SFMTA TVM machines, sometimes when adding cash and a transaction crashes, the vending machine keeps the money, and no value is added to the customer's card
Who's Impacted	• Clipper customers • Station agents
Solution/Timeline	• Issue has been identified to be a network connectivity issue. Increased transaction time before timeout occurs being tested today in production Pilot since 1/22 and rolled out to all Machines on 1/24, monitoring results.

Fare Inspection Device

Problem	• Device occasionally unable to confirm valid debit/credit card tap during inspection. • Application crashes during login or when inspecting a card.
Who's Impacted	• Customers using tap and ride with Credit and Debit cards • Fare inspection workers
Solution/Timeline	Keys • Some devices appear to have the incorrect keys loaded by supplier. • Ongoing onsite update of keys happening now. Device Initialization • Inspectors must wait one minute after login for allow list to load, or device will crash. • Software Update to have an "Initializing" screen to prevent tapping before loading. Expected release to Production Week of February 9th.

Customer Service Terminals

Problem	• Issues with adding value verification failures • Clipper card replacement issues • Credit card acceptance issues
Who's Impacted	• Clipper customers • In-person customer service center agents
Solution/Timeline	• Customer service terminal software release expected by 2/4 that will fix critical issues. • Additional release of software patches will come later in February.

Migration of Autoloads

Problem	• Under certain conditions, an autoload setup will not be migrated:
	  • If the primary funding source is invalid (expired)
	  • If the pass on the card is expired and a card is migrated after the end of the month but before the patron has tapped to trigger legacy card load of the current month's pass
	  • Results in unintended use of available cash value

Who's Impacted	• Clipper autoload customers
Solution/Timeline	• Reset the expiration date on the passes that failed autoload migrate, allowing the autoload enrollment to occur. • **Release to production 1/29.**

Monitoring

Problem	• Delayed notification of system errors and capacity issues with existing monitoring in place
Who's Impacted	• Clipper customers • Call center customer service representatives • Station agents
Solution/Timeline	• Apply latest patches (Ongoing through 2/16) • Add missing servers/nodes (Ongoing through 1/30) • Tune thresholds & alert rules (Ongoing through 1/30)

Financial Settlement

Problem	• Lack of manual or fully automated end-to-end reconciliation • Delayed data (approx. 10-day lag) creating long turn around time on investigating issues • Reports are not fully populating
Who's Impacted	• MTC and Operator accounting teams
Solution/Timeline	• Workshop occurred on 1/13 & 1/22 to review processes and outstanding comments • Escalated Automatization and End-to-End manual process Mid February exact date being determined now • Root Cause of 10-day is with Database team. Expected release to test lab January 30th. Mid February release to Production • Updated Documentation with MTC comments provided showing end to end solution on 12/30. Feedback received from MTC and updated documents. Expected completion January 23rd