BitFire Automated Environments User Guide

Introduction

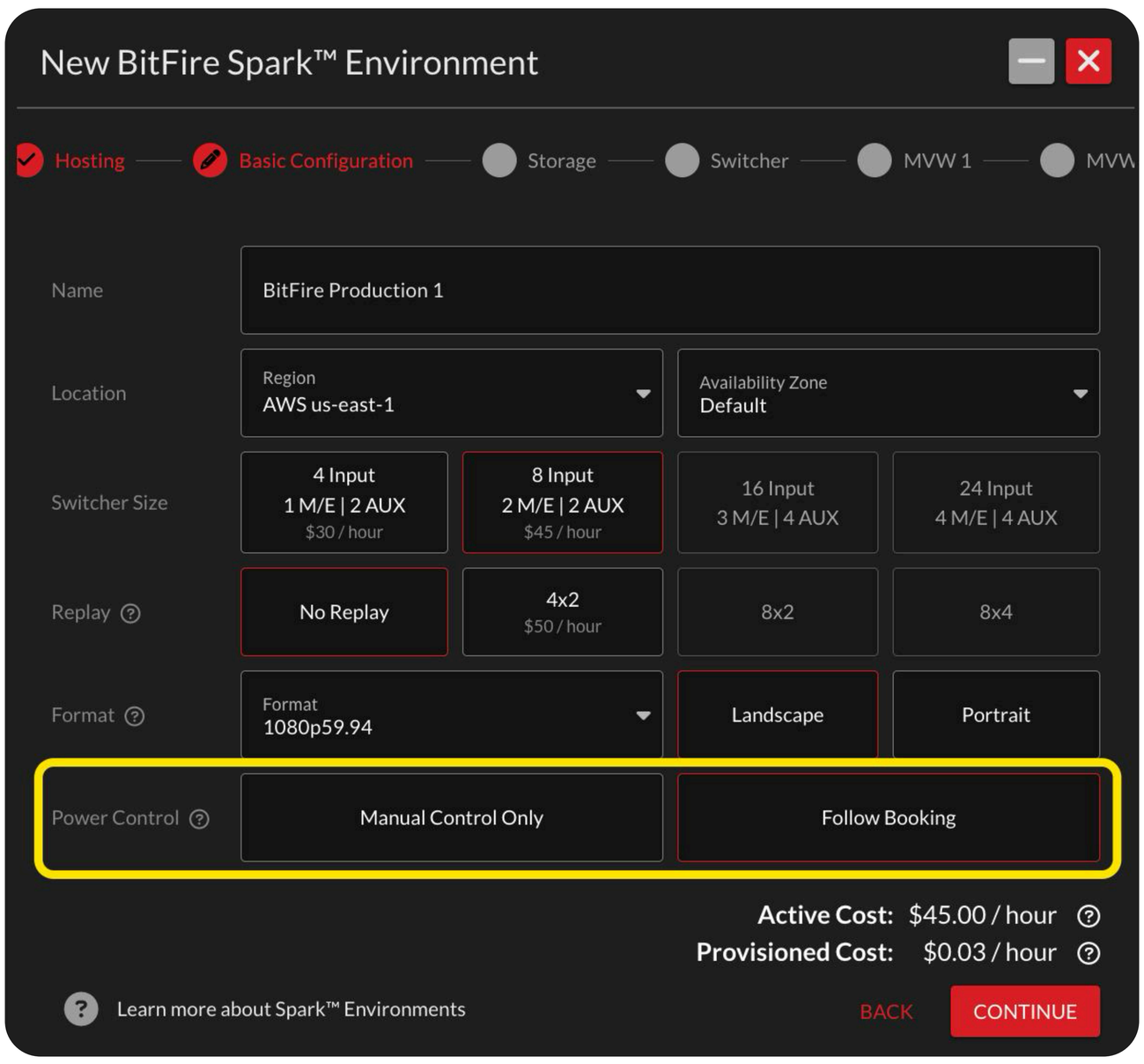
This project expands on the ways in which the power state of Spark™ Environments can be controlled, through two added features:

- The ability to schedule specific power-related events.
- The ability to configure environments to automatically adjust their power state according to Booking usage.

Configuring Power Control

The Spark™ Builder now includes a **Power Control** parameter with two options, **Manual Control Only** (the default) and **Follow Booking**.

- **Manual Control Only**: Environments will only turn on or off when manually toggled or scheduled by the user. They pay no attention to the bookings depending on them. Turning an environment on will leave it turned on until manually turned off, and an environment that is turned off will remain turned off until otherwise prompted.
- **Follow Booking**: Environments automatically turn on and off, depending on booking usage; when a user books a feed into a follow-booking environment, it will turn on (if not already on), and remain on until there are no feeds actively booked into or out of it



Note: these environments can also be forced into an always-on state, which can be performed via the resource row toggle or a scheduled **Force Always On** event. When locked to the always-on state, these environments will remain powered on, regardless of booking usage. When the always-on state is removed, the environment evaluates current active bookings and feeds to determine if it should remain on or turn off.

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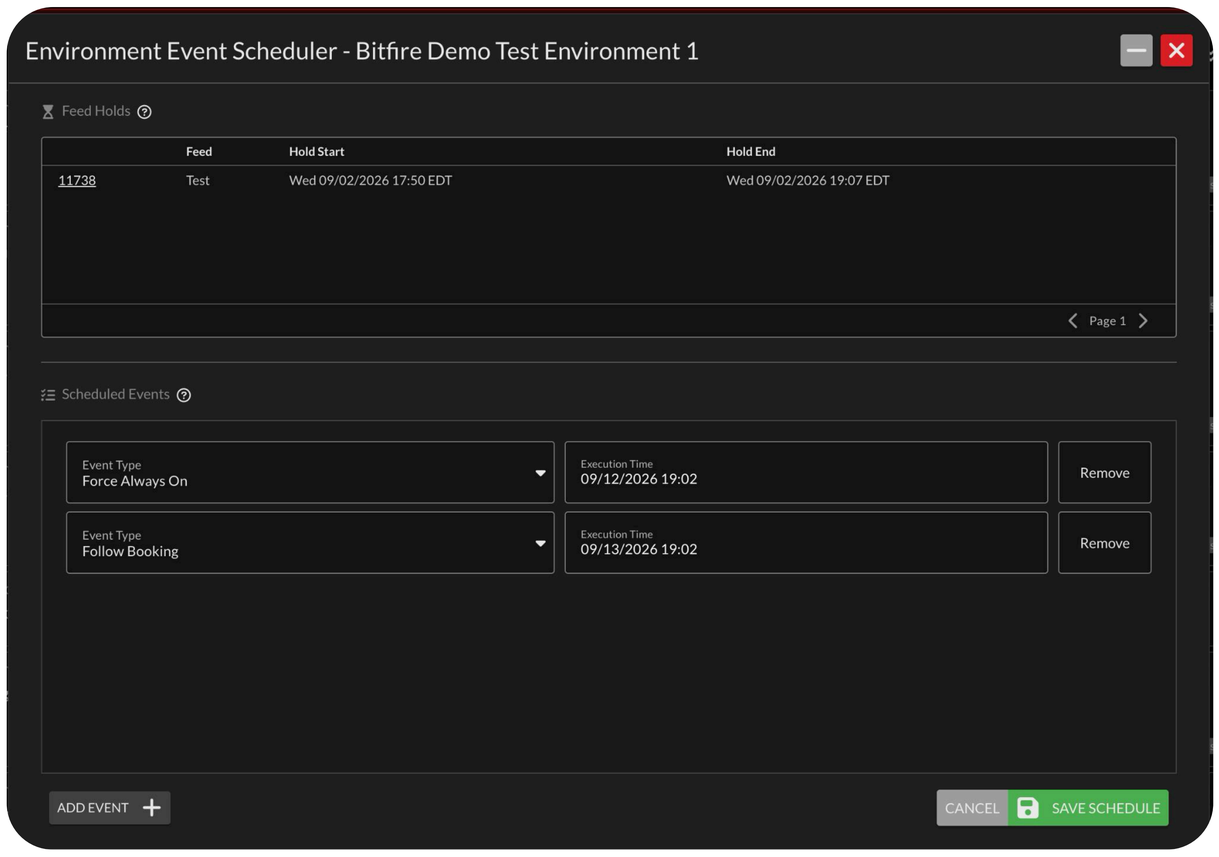
Environment Schedule & Event Types

Future power-related events can now be scheduled for Spark™ Environments. These events can be viewed, created, and modified via the environment's schedule. Users can view the current schedule for **Spark™ Environments** via the new calendar button in the top left corner of the resources page, and via the Spark™ Environment Schedule quick action available to each environment. In addition to events, this schedule will also show any active and upcoming feed dependencies relevant to the environment *(if the environment allows booking control)*.

- **Manual-Control-Only Environments**: The feed schedule will always be empty. The available event types are Turn On and Turn Off, which execute standard power toggles at user-specified times.
- **Follow-Booking Environments**: The feed schedule displays all active and upcoming feeds requesting usage of the environment. The available event types are **Force Always On**, which overrides feed usage demands to keep the environment powered indefinitely, and **Follow Booking**, which restores automated power control based on active feeds. By default, these environments are in the **Follow Booking state**.

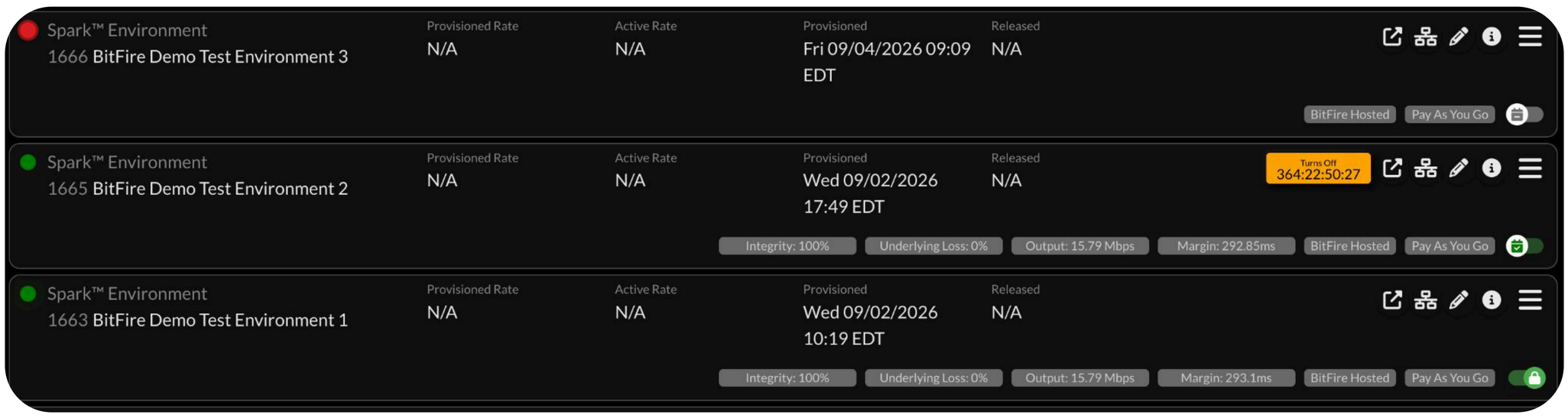


Note: The resource-row power toggle indicates if an environment is specifically locked to the "Always On" state.

- If a **Follow-Booking** environment is powered on due to an active feed dependency (but not forced to "Always On"), the toggle will appear OFF.
- If it has been forced to "Always On" (either via the toggle or a scheduled event), the toggle will appear ON.

The three environments pictured below are **Follow-Booking** environments:

- **BitFire Demo Test Environment 1:** Powered on and locked to "Always On" (indicated by the green toggle and lock icon). It will remain powered on even after bookings complete.
- **BitFire Demo Test Environment 2**: Powered on and in use by bookings, but not locked to "Always On" (indicated by the off-toggle and green calendar icon). It will automatically turn off once dependent feeds conclude.
- **BitFire Demo Test Environment 3**: Powered off (indicated by the grey toggle and grey minus-calendar icon). It is not in use by any bookings and not locked to "Always On."



Manual-Control-Only environments retain the standard green-means-on, grey-means-off toggles, without any added icons.

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Resource Row Countdowns

The resource row now displays countdowns to upcoming scheduled events and power state changes due to bookings.

- **Green Countdown:** Indicates when the environment will turn on.
- **Yellow or Red Countdown**: Indicates when the environment will turn off.
- **Grey Countdown**: Indicates a scheduled state change that will not alter the current power state.
    - A **Follow-Booking** environment which is powered on because of an active feed, but which has a **Force Always On** event scheduled before the end of the active feed will have a grey countdown, as the environment will not experience any change in power state when the event fires.

Recovery Quick Actions

To account for edge cases and failed IAPS (Inferno Auto Provisioning System) requests, new recovery quick actions have been added to the resource row.

- **Retry Turn On**: Triggers a complete IAPS turn-on request.
    - This action is available when the environment is already expected to be on.
- **Retry Turn Off**: Triggers a complete IAPS turn-off request.
    - This action is available when the environment is already expected to be off.
- **Force Turn Off:** Triggers a full IAPS turn-off request for powered-on, follow-booking environments.
    - If the environment is still in use by a booking, it will turn off and immediately turn back on.

Booking & Feed Form Buffers

A new section appears on the Booking and Feed Forms, when booking to / from environments that allow booking control.

- This section displays a start time buffer, an end time buffer, and a list of affected environments with their approximated start and end times.
- The start and end hold times represent the requested window of usage, not necessarily the actual power-on or power-off execution times.
- While buffer times are set globally per booking, **the actual calculated hold times are relative to the individual feeds requesting usage.**
    - If a booking starts at 10:00 AM but the feed does not actually start until 2:00 PM, the environment will be requested for usage around 2:00 PM, with the exact time depending on the buffer value.