App Frameworks

#WWDC16

What's New in watchOS 3

Session 208

Josh Shaffer watchOS Engineering

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Glanceable

Glanceable

Actionable

Glanceable

Actionable

Responsive

Reminders
10:09
Pick up Megan
Today, 11:00 AM
Call Mom
Book hotel
Book flight

TUE
14
10:09
11:00AM
Pick up Megan
San Francisco Int.
68°
LON
6:09

Reminders
10:09
Pick up Megan
Today, 11:00 AM
Call Mom
Book hotel
Book flight

10:09
REMINDERS
Pick up Megan
San Francisco Int.
Snooze
Completed

TUE
14
10:09
11:00AM
Pick up Megan
San Francisco Int.
68°
LON
6:09

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Pick up Megan
San Francisco Int.
Snooze
Completed

TUE
14
10:09
11:00AM
Pick up Megan
San Francisco Int.
68°
LON
6:09
Workout
Workout
Outdoor Walk
Outdoor Run
Outdoor Cycle
Indoor Walk
10:09
REMINDERS
Pick up Megan
San Francisco Int.
Snooze
Completed

TUE
14
10:09
11:00AM
Pick up Megan
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68°
LON
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Outdoor Walk
Outdoor Run
Outdoor Cycle
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Completed

TUE
14
10:09
11:00AM
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68°
LON
6:09

Activity
Activity

10:09
REMINDERS
Pick up Megan
San Francisco Int.
Snooze
Completed

TUE
14
10:09
11:00AM
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68°
LON
6:09

Activity
Activity

10:09
REMINDERS
Pick up Megan
San Francisco Int.
Snooze
Completed

TUE
14
10:09
11:00AM
Pick up Megan
San Francisco Int.
68°
LON
6:09

Stopwatch
Analog
00:00.00

10:09
REMINDERS
Pick up Megan
San Francisco Int.
Snooze
Completed

60
5
10
15
20
25
30
35
40
45
50
55
00:00.00

60
5
10
15
20
25
30
35
40
45
50
55
00:00.00

60
5
10
15
20
25
30
35
40
45
50
55
00:00.00

What's New in watchOS 3

Background App Refresh

Simplifying Navigation

Expanded API Availability

Discoverability and Configuration

Background App Refresh

Reminders
Reminders
Pick up Megan
Today, 11:00 AM
Call Mom
Book hotel
Book flight

TUE
14
10:09
11:00AM
Pick up Megan
San Francisco Int.
68°
LON
6:09

Update complication

Update app

Update complication

Update app

Update snapshot

Update snapshot

Update snapshot

Reminders
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Pick up Megan
Today, 11:00 AM
Call Mom
Book hotel
Book flight

Reminders
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6:09

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Pick up Megan
San Francisco Int.
68°
LON
6:09

10:09
REMINDERS
Pick up Megan
San Francisco Int.
Snooze
Completed

10:09
REMINDERS
Pick up Megan
San Francisco Int.
Snooze
Completed

TUE
14
10:09
Reminders
No scheduled
reminders
68°
LON
6:09

TUE
14
10:09
Reminders
No scheduled
reminders
68°
LON
6:09

Dexcom
95
@ 10:09 AM

95
@ 10:09 AM

10:09
95
@ 10:09 AM

Dexcom
10:09
95 →
mg/dL
1HR
200
80

Dexcom
10:09
95 →
mg/dL
1HR
200
80

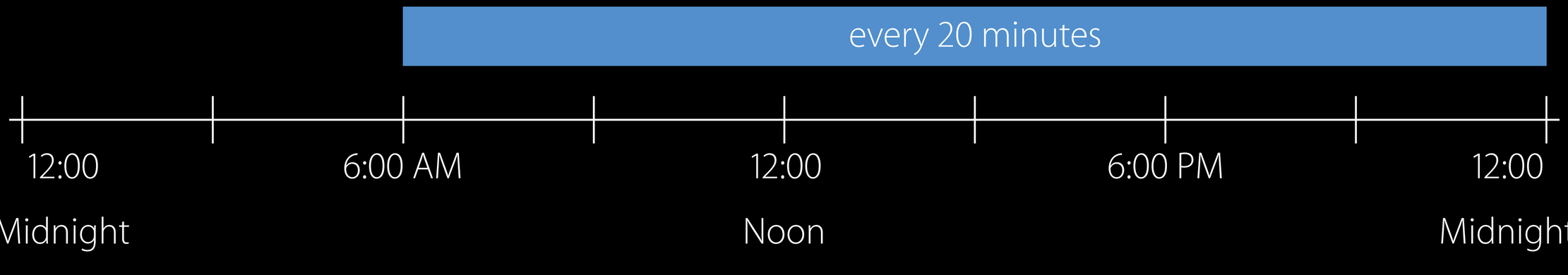
Dexcom
10:09
95 →
mg/dL
1HR
200
80

Complication Push Updates

Stocks

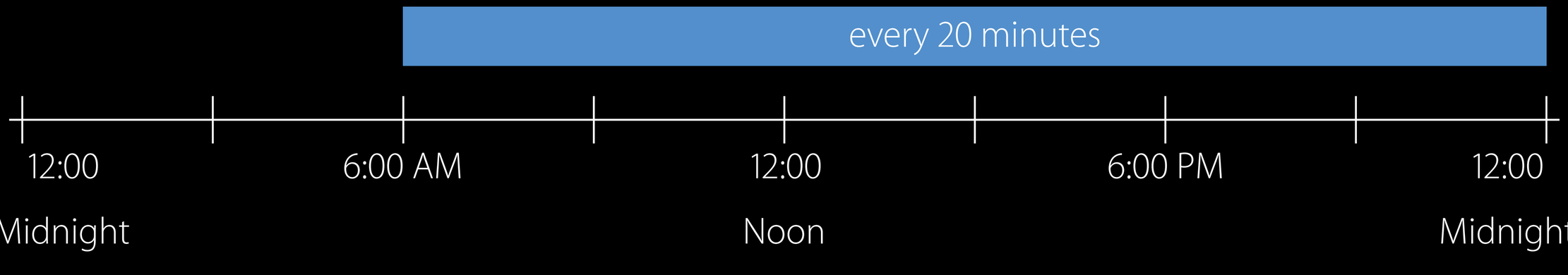
Complication Push Updates

Stocks



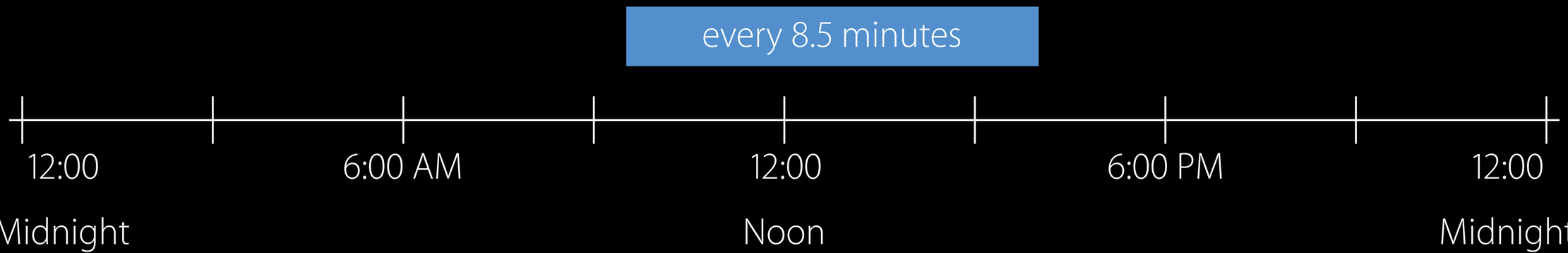
Complication Push Updates

Stocks



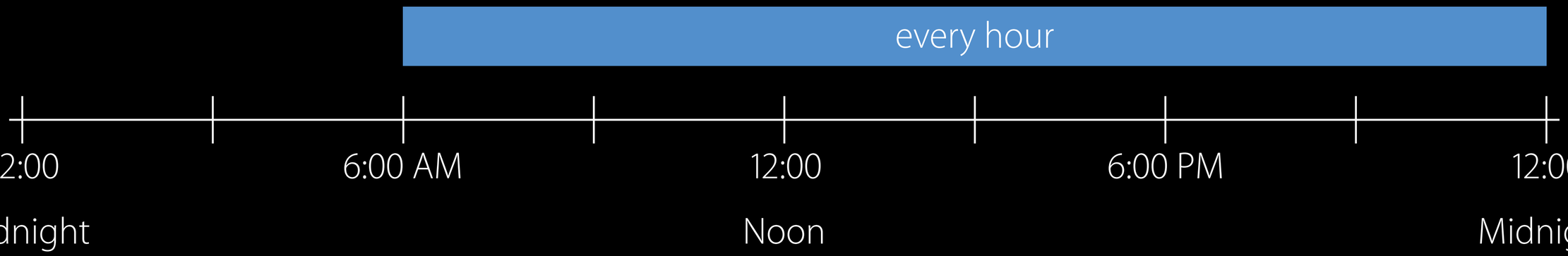
Complication Push Updates

Stocks



Reminders
Reminders
Pick up Megan
Today, 11:00 AM
Call Mom
Book hotel
Book flight

Scheduled Updates



Background App Refresh

Keeping Your Watch App up to Date | Mission | Thursday 9:00AM

Navigation Enhancements

Beverages
10:09
Coffee
Iced Tea
Water
Soda

Beverages
10:09
Coffee
Iced Tea
Water
Soda

Beverages
10:09
Coffee
Iced Tea
Water
Soda

Coffee
10:09
3
Drink

Coffee
10:09
3
Drink

Soda
10:09
0
Drink

Soda
10:09
0
Drink

Purchase
10:09
Roasted Chicken
$12
Buy

Purchase
10:09
Roasted Chicken
$12
Buy

TUE
14
10:09
Reminders
No scheduled
reminders
68°
LON
6:09

TUE
14
10:09
Reminders
No scheduled
reminders
68°
LON
6:09

10:09
F
FOOD
Roasted Chicken is currently unavailable.
Change Order

10:09
F
FOOD
Roasted Chicken is currently unavailable.
Change Order

TUE
14
10:09
Reminders
No scheduled
reminders
68°
LON
6:09

TUE
14
10:09
Reminders
No scheduled
reminders
68°
LON
6:09

Pot Pie
10:09
Chicken
Potatoes
Carrots
Onion

Pot Pie
10:09
Chicken
Potatoes
Carrots
Onion

Pot Pie
10:09
Chicken
Potatoes
Carrots
Onion
8 minutes
TUE
14
10:09
11:00AM
Pick up Megan
San Francisco Int.
68°
LON
6:09

Quick Interaction Techniques for watchOS Presidio Wednesday 11:00AM

Enhanced API Availability

Scheduled updates

Complication push updates

Snapshotting

Keeping Your Watch App up to Date Mission Thursday 9:00AM

Background runtime

Frontmost during workout

Continuous sensor access

Building Great Workout Apps

Pacific Heights Friday 11:00AM

Background runtime

SpeedySlo...tchKit App 〉 iPhone + Apple Watch | Running HealthyLiving.watch.extension on Apple Watch

CPU Report

HealthyLiving.watch.extensi...

CPU 0%

Memory 2.3 MB

Disk Zero KB/s

Network Zero KB/s

CPU

Profile in Instruments

Percentage Used

65%

Usage Comparison

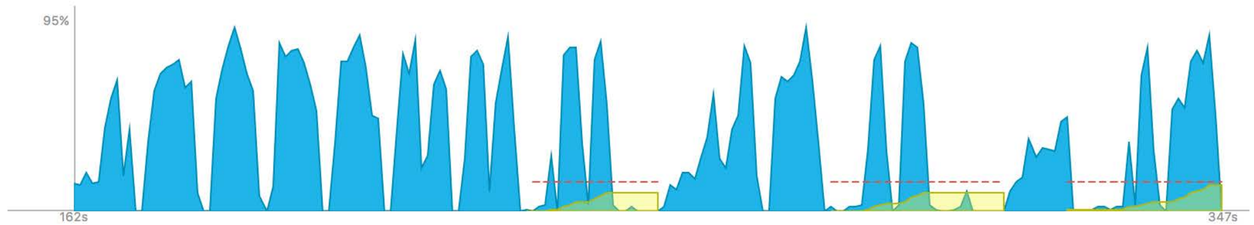
HealthyLiving.watch.extension
65%

Other Processes
35%

Free
0%

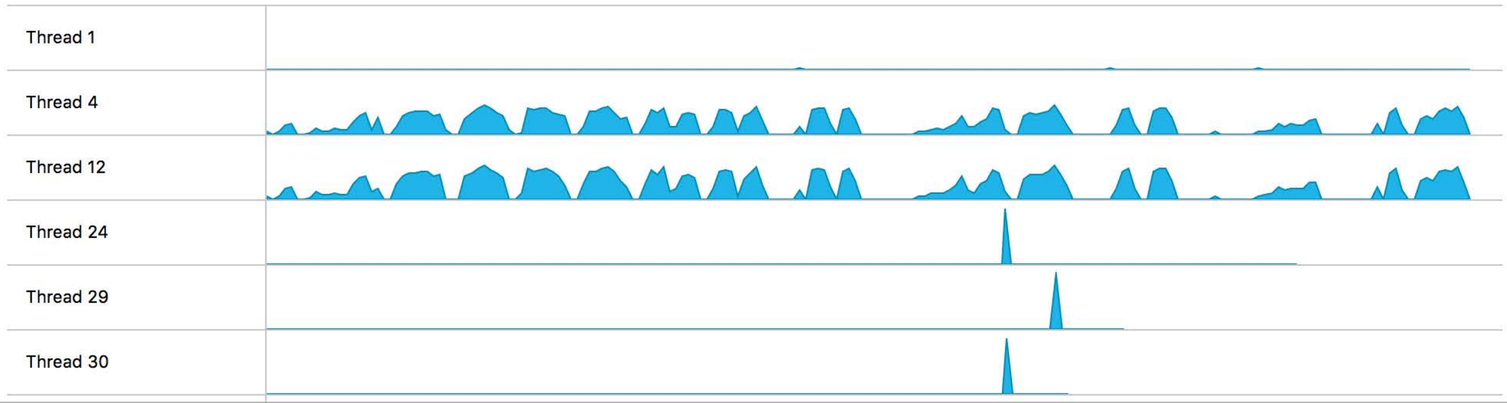
Usage over Time

Duration: 5 min 59 sec
High: 95%
Low: 0%
Cap: 15%
Average: 13%



Usage **Average** **Cap**

Threads



Filter

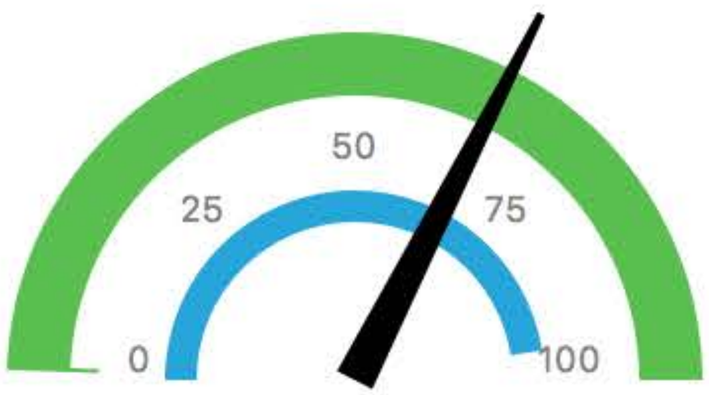
HealthyLiving.watch.extension

hKit App 〉 iPhone + Apple Watch | 2 Running HealthyLiving.watch.extension on Apple Watch

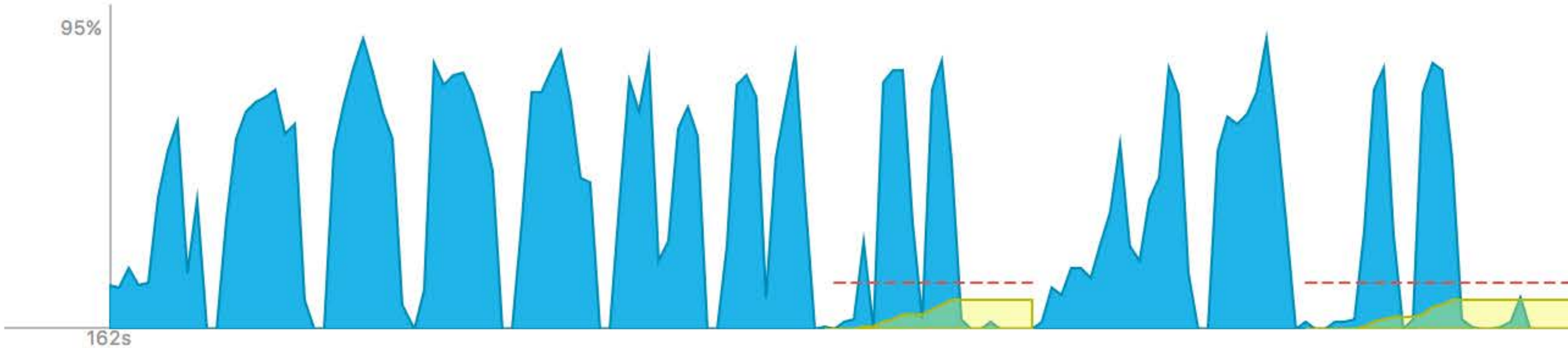
CPU Report

CPU

Percentage Used



65%


95%
162s
Usage
Average
Cap

Crown events

Gesture recognizers

Gyroscope

Quick Interaction Techniques for watchOS	Presidio	Wednesday 11:00AM

Acorns
10:09
$516.66
$0 Invested
August 29th

Acorns
10:09
$516.66
$0 Invested
August 29th

Week 8
10:09
RESISTANCE
3 REMAINING

Week 8
10:09
RESISTANCE
3 REMAINING

SpriteKit and SceneKit

Inline video

Quick Interaction Techniques for watchOS	Presidio	Wednesday 11:00AM

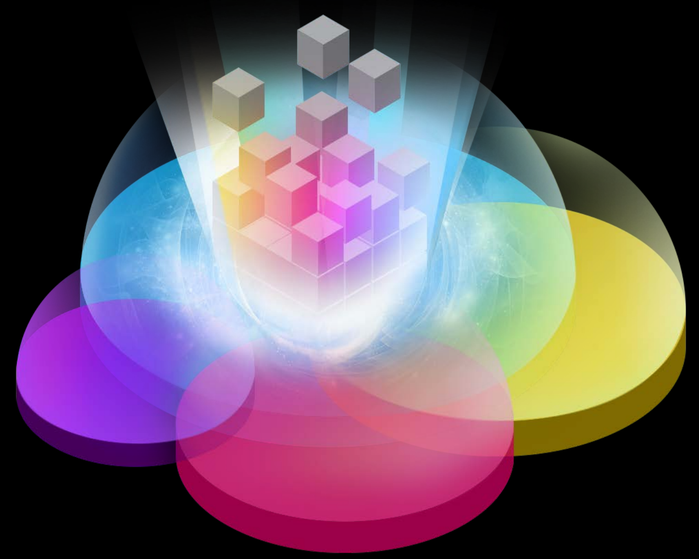
1 of 12
10:09

1 of 12
10:09

SpriteKit and SceneKit

GameKit

Speaker access



Game Technologies for Apple Watch | Mission | Friday 3:00PM

Fish Time
10:09

Fish Time
10:09

What's New with CloudKit | Presidio | Thursday 3:00PM

What's New with Wallet and Apple Pay	Mission	Tuesday 3:00PM

Discoverability and Configuration

10:09 AM 100%

Face Gallery **Featured Complications**

Dexcom

Activity Digital

Activity Analog

U

Lyft

Activity Digital

Activity Analog

U

Acorns

My Watch Face Gallery App Store Search

10:09 AM 100%

My Watch

Utility

CUP 10:09 72°

4:30 GUITAR LESSON

Detail

MINIMAL SIMPLE MEDIUM

Complications

Top Left World Clock: Cupertino

Top Right Weather

My Watch Face Gallery App Store Search

UTILITY

CUP 10:09 72°

4:30PM GUITAR LESSON

Customize

10:09 AM 100%

My Watch Dock Edit

Workout
Weather
Calendar
Music
Activity
Maps
Stocks
Settings

DO NOT INCLUDE

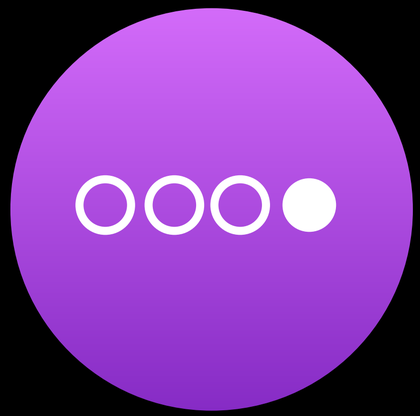
Alarms
Camera

My Watch Face Gallery App Store Search

Reminders

Reminders
Pick up Megan
11:00 AM
Call Mom
Book hotel

Keep in Dock

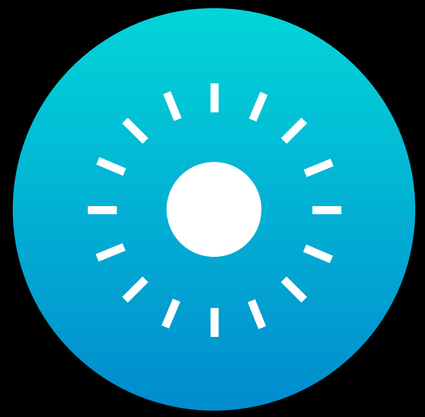


Glanceable

Actionable

Responsive

Designing Great Apple Watch Experiences | Presidio | Wednesday 1:40PM



Responsive

Keeping Your Watch App up to Date	Mission	Thursday 9:00AM
Architecting for Performance on watchOS 3	Mission	Thursday 3:00PM

More Information

https://developer.apple.com/wwdc16/208

Related Sessions

What's New with Wallet and Apple Pay	Mission	Tuesday 3:00PM
Quick Interaction Techniques for watchOS	Presidio	Wednesday 11:00AM
Designing Great Apple Watch Experiences	Presidio	Wednesday 1:40PM
Keeping Your Watch App up to Date	Mission	Thursday 9:00AM
What's New with CloudKit	Presidio	Thursday 3:00PM
Architecting for Performance on watchOS 3	Mission	Thursday 3:00PM
Building Great Workout Apps	Pacific Heights	Friday 11:00AM
Game Technologies for Apple Watch	Mission	Friday 3:00PM

Labs

HealthKit Lab	Frameworks Lab A Wednesday 10:00AM
WatchKit and ClockKit Lab	Frameworks Lab B Wednesday 12:00PM
HealthKit Lab	Frameworks Lab A Thursday 9:00AM
WatchKit and Background Tasks Lab	Frameworks Lab C Thursday 10:30AM
WatchKit and WatchConnectivity Lab	Frameworks Lab B Friday 2:00PM

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