Node.js Intl: Where we are, what’s next

Steven R. Loomis
IBM Global Foundations Technology Team

ibm.biz/srloomis  @srl295
whoami

- IBM Global Foundations Technology Team
whoami

- IBM Global Foundations Technology Team
- IBM’s ICU4C lead
whoami

- IBM Global Foundations Technology Team
- IBM’s ICU4C lead
- Rep: Unicode TC / Chair: ULI-TC / CLDR
whoami

- IBM Global Foundations Technology Team
- IBM’s ICU4C lead
- Rep: Unicode TC / Chair: ULI-TC / CLDR
- Node Intl WG Facilitator
whoami

- IBM Global Foundations Technology Team
- IBM’s ICU4C lead
- Rep: Unicode TC / Chair: ULI-TC / CLDR
- Node Intl WG Facilitator
- Globalization Pipeline on Bluemix
whoami

- IBM Global Foundations Technology Team
- IBM’s ICU4C lead
- Rep: Unicode TC / Chair: ULI-TC / CLDR
- Node Intl WG Facilitator
- Globalization Pipeline on Bluemix
2010: **ECMA-402 1st ed.**
2010: **ECMA-402 1st ed.**

- IETF BCP 47 Language Tag (en-US vs. fr-CH …)
- Collation (sorting)
- Number Format (1,234.56 vs 1.234,56)
- Date Format (Oct 28, 2015 vs 10 de oct. de 2015)
2010: **ECMA-402 1st ed.**

- IETF BCP 47 Language Tag (en-US vs. fr-CH …)
- Collation (sorting)
- Number Format (1,234.56 vs 1.234,56)
- Date Format (Oct 28, 2015 vs 10 de oct. de 2015)
- Support in Chrome, Firefox, IE/Edge, Opera.
2010: **ECMA-402 1st ed.**

- IETF BCP 47 Language Tag (en-US vs. fr-CH …)
- Collation (sorting)
- Number Format (1,234.56 vs 1.234,56)
- Date Format (Oct 28, 2015 vs 10 de oct. de 2015)
- Support in Chrome, Firefox, IE/Edge, Opera.
- WebKit (Safari) [WIP](#)
2015: 2nd ed

- Editorial
- Array.toLocaleString()
2015: 2nd ed

- Editorial
- Array.toLocaleString()
- https://github.com/tc39/ecma402
“Intl”
“Intl”

- Global object Intl:
  - Intl.Collator (sorting)
“Intl”

- Global object Intl:
  - Intl.Collator (sorting)
  - Intl.DateTimeFormat
“Intl”

- Global object Intl:
  - Intl.Collator (sorting)
  - Intl.DateTimeFormat
  - Intl.NumberFormat
“Intl”

- Global object Intl:
  - Intl.Collator (sorting)
  - Intl.DateTimeFormat
  - Intl.NumberFormat
- Other objects:
  - Date().toLocaleString()
“Intl”

- Global object Intl:
  - Intl.Collator (sorting)
  - Intl.DateTimeFormat
  - Intl.NumberFormat

- Other objects:
  - Date().toLocaleString()
  - Number().toLocaleString()
“Intl”

- Global object Intl:
  - Intl.Collator (sorting)
  - Intl.DateTimeFormat
  - Intl.NumberFormat

- Other objects:
  - Date().toLocaleString()
  - Number().toLocaleString()
  - "abc".localeCompare("ábc")
“Intl”

- Global object Intl:
  - Intl.Collator (sorting)
  - Intl.DateTimeFormat
  - Intl.NumberFormat

- Other objects:
  - Date().toLocaleString()
  - Number().toLocaleString()
  - "abc".localeCompare("ábc")
  - "ü¨".normalize("NFC") === "ü"
“Intl”

- Global object Intl:
  - Intl.Collator (sorting)
  - Intl.DateTimeFormat
  - Intl.NumberFormat

- Other objects:
  - Date().toLocaleString()
  - Number().toLocaleString()
  - "abc".localeCompare("ábc")
  - "u¨".normalize("NFC") === "ü"
  - "i".toLocaleUpperCase() / "I".toLocaleLowerCase() (not implemented fully)
Intl in Node.js

- 2012: ECMA-402 standardized. Google v8-i18n project starts.
Intl in Node.js

- 2012: ECMA-402 standardized. Google v8-i18n project starts.
- 2013: v8-i18n integrated into v8 codebase
Intl in Node.js

- 2012: ECMA-402 standardized. Google v8-i18n project starts.
- 2013: v8-i18n integrated into v8 codebase
- 2014: Available as a compile option in node.js. Packaging work merged into v0.12 branch.
Intl in Node.js

- 2012: ECMA-402 standardized. Google v8-i18n project starts.
- 2013: v8-i18n integrated into v8 codebase
- 2014: Available as a compile option in node.js. Packaging work merged into v0.12 branch.
- 2015 Feb 6: “Intl” enabled in node.js v0.12 downloads!
Intl in Node.js

- 2012: ECMA-402 standardized. Google v8-i18n project starts.
- 2013: v8-i18n integrated into v8 codebase
- 2014: Available as a compile option in node.js. Packaging work merged into v0.12 branch.
- 2015 Feb 6: “Intl” enabled in node.js v0.12 downloads!
- (io.js fork didn’t include Intl between 1.0.0 and 3.0.x...
Intl in Node.js

- 2012: ECMA-402 standardized. Google v8-i18n project starts.
- 2013: v8-i18n integrated into v8 codebase
- 2014: Available as a compile option in node.js. Packaging work merged into v0.12 branch.
- 2015 Feb 6: “Intl” enabled in node.js v0.12 downloads!
- (io.js fork didn’t include Intl between 1.0.0 and 3.0.x…
- … but reappeared in 3.1.0!)
**Intl in Node.js**

- 2012: ECMA-402 standardized. Google v8-i18n project starts.
- 2013: v8-i18n integrated into v8 codebase
- 2014: Available as a compile option in node.js. Packaging work merged into v0.12 branch.
- 2015 Feb 6: “Intl” enabled in node.js v0.12 downloads!
- (io.js fork didn’t include Intl between 1.0.0 and 3.0.x…)
- … but reappeared in 3.1.0!
- 2015 October: Experimental `full-icu` npm module / discussion about auto discovery [#3460](https://github.com/nodejs/node/issues/3460)
Node Intl “Stack”

- node (You are here)
Node Intl “Stack”

- node (You are here)
- v8
Node Intl “Stack”

- node (You are here)
- v8
- **ICU** (Implements Unicode/Formatting functions)
Node Intl “Stack”

- node (You are here)
- v8
- ICU (Implements Unicode/Formatting functions)
- CLDR (Source of data to drive formatting/collating)
Intl WG

- [https://github.com/nodejs/Intl](https://github.com/nodejs/Intl)
Intl WG

- [https://github.com/nodejs/Intl](https://github.com/nodejs/Intl)
- First Meeting: August 11, 2015
Intl WG

- [https://github.com/nodejs/Intl](https://github.com/nodejs/Intl)
- First Meeting: August 11, 2015
- Scope:
  - Functionality & compliance (standards: ECMA, Unicode...)

36 / 52
Intl WG

- [https://github.com/nodejs/Intl](https://github.com/nodejs/Intl)
- First Meeting: August 11, 2015
- Scope:
  - Functionality & compliance (standards: ECMA, Unicode…)
  - Support for Globalization and Internationalization issues that come up in the tracker
Intl WG

- [https://github.com/nodejs/Intl](https://github.com/nodejs/Intl)
- First Meeting: August 11, 2015
- Scope:
  - Functionality & compliance (standards: ECMA, Unicode...)
  - Support for Globalization and Internationalization issues that come up in the tracker
  - Guidance and Best Practices
Intl WG

- [https://github.com/nodejs/Intl](https://github.com/nodejs/Intl)
- First Meeting: August 11, 2015
- Scope:
  - Functionality & compliance (standards: ECMA, Unicode...)
  - Support for Globalization and Internationalization issues that come up in the tracker
  - Guidance and Best Practices
  - Refinement of existing Intl implementation
How do you use the Intl features

- Download Node 0.12+
How do you use the Intl features

- Download Node 0.12+
- Use .toLocaleString() instead of .toString() on Number and Date
How do you use the Intl features

- Download Node 0.12+
- Use `.toLocaleString()` instead of `.toString()` on Number and Date
- Use "foo".localeCompare("bar") instead of < / > / ==
How do you use the Intl features

- Download Node 0.12+
- Use `.toLocaleString()` instead of `.toString()` on Number and Date
- Use "foo".localeCompare("bar") instead of < / > / ==
- visit MDN Intl: [mzl.la/10S0tvf](mzl.la/10S0tvf)
What’s next for ECM402?

- https://github.com/tc39/ecma402/
What’s next for ECM402?

- [https://github.com/tc39/ecma402/](https://github.com/tc39/ecma402/)
- 3rd edition: 2016?
What’s next for ECM402?

- [https://github.com/tc39/ecma402/](https://github.com/tc39/ecma402/)
- 3rd edition: 2016?
- Possible features:
  - Plural rules
  - Units
  - Locale services
  - Unicode data
  - Regex improvements
  - Token formatting
What's next for the Intl WG?

- Improve documentation
What's next for the Intl WG?

- Improve documentation
- Make it easier to locate full ICU support (not just English) #3460
What's next for the Intl WG?

- Improve documentation
- Make it easier to locate full ICU support (not just English) #3460
- Localization for Node and modules
What's next for the Intl WG?

- Improve documentation
- Make it easier to locate full ICU support (not just English) #3460
- Localization for Node and modules
- Outreach to user communities
What's next for the Intl WG?

- Improve documentation
- Make it easier to locate full ICU support (not just English) #3460
- Localization for Node and modules
- Outreach to user communities
- Data packaging / loading
Thanks / Q&A

- Social: @srl295
- Email: srloomis at us.ibm.com
- Slides/Contact @ http://ibm.biz/srloomis
- Node Intl WG: github.com/nodejs/Intl