

November 15, 2015

## Welcome

### Summary

- Cytoscape v3.3 is now available for immediate download.
- Major new features
  - Network Analyzer is more than 1000 times faster (!)
  - Filters can select based on properties of adjacent nodes and can edit selections
  - Improved network and table file importer
  - GPU support for Prefuse layouts
  - Improvements in Group settings & visualization
  - Default network layout is now force directed
  - Aesthetic and consistency improvements in many dialogs
  - Cytoscape core functions are repackaged as apps that can be improved often
  - Cytoscape now detects when new versions of your installed apps are available
  - cyREST is now delivered with Cytoscape
  - Java 7 is no longer supported
- Addresses 193 issues relative to v3.2.1 (see Section 10)
  - Numerous UI consistency & operational issues
  - Improvements in Group settings & visualization
  - New DOT file reader
  - Updated BioGrid files
  - Marching ant animation for edges
  - Removing duplicate edges much faster
  - More and better arrows on directed edges
- 26 more Apps are available in the App Store as compared to the v3.2.1 release.
- Ready for use by all segments of the Cytoscape community.
- Continues v3.2's core feature set, specifically:
  - Upward compatible and can coexist with previous Cytoscape versions
  - Most popular plugins from v2.x versions are available as apps, with more to follow.
- What to do next ...

Release notes: <http://www.cytoscape.org/releasesnotes.html>

### Dear Cytoscape User

We are proud and pleased to release Cytoscape v3.3. This new release contains both new features and improvements to functionality and documentation as described in Sections 7 and 10.

This release marks our most extensive testing efforts to date, including 42 different combinations of operating systems and Java Virtual Machines across Windows, Linux, and Mac OS platforms. Check out your system's configuration here: <http://bit.ly/1MBbQIJ>. Note that v3.3 retains support for 32 bit JVMs and Windows XP, as they are a significant portion of Cytoscape installations. Note, too, that v3.3 fully supports Java 8, but not Java 7.

Finally, in v3.3, 26 Apps were added to the App Store (<http://apps.cytoscape.org>), bringing the total to 102 (not including 13 apps that are now part of Cytoscape Core). The apps new for v3.3 include:

cyNeo4j	SCODE	AdjExplorer
RenoDol	CytoGEDEVO	iCTNet2
ModuLand 2.0	StrongestPath	PhosphoPath
nciNetView	Cy3sbml	dot-app
SLiMScape	CySpanningTree	Bisogenet
General SPARQL	Pesca3.0	TieDIE
AnatApp	PSFC	Obfuscator
CyAnimator	SocialNetwork	cyTransFinder
ExpressionCorrelation	PTMOracle	

We expect to make a v3.4 release in mid Q2 2016. As our plans firm up, we'll publish them to the Cytoscape community (<http://www.cytoscape.org/roadmap.html>). For more on our roadmap, see Section 9.

*If you are a new or casual Cytoscape user, **welcome aboard!** Feel free to either read on or jump ahead to What to Do Next for a quick start.*

*For clarity, references to "Cytoscape 3.x" apply to all Cytoscape versions 3.0.0 and later.*

## For Cytoscape v2.x Users

Previous Cytoscape releases (through v2.8.3) focused on adding numerous annotation, import, layout, analysis, and visualization features, all of which have combined to deliver critical insights into biological processes of interest to Cytoscape's broad and loyal user community. In fact, many of these features were created and contributed by Cytoscape users, themselves, using Cytoscape's plugin architecture.

Version 3.0 marked a major reorganization of Cytoscape program code – it enabled us to deliver additional features more quickly and reliably than before, including improvements that benefit new users, casual users, power users, and app developers. Along the way, some features were changed to allow them to better interoperate with other features, some little-used features were dropped, and user interface was improved. We were particularly excited about the new Cytoscape App Store (described below), which afforded users access to the growing collection of *apps* (formerly called *plugins*) produced by fellow Cytoscape users. A table of new features is presented in Section 7.

Since v3.0, we released updates v3.0.1 and v3.0.2 as maintenance releases, and then v3.1 and v3.2 as feature releases, including greatly improved visual styles, node filtering, speed, network capacity, and web publishing. This new release is v3.3.

While all version 3 releases are upwardly compatible with previous Cytoscape versions (i.e., they can load, analyze, and display networks and attributes stored using previous versions, including v2.x), they can coexist with previous versions on the same workstation. It is not necessary to uninstall previous versions before installing a version 3 release, and you can choose to use both on the same workstation.

Version 3 is rapidly maturing and has achieved a reputation for speed, reliability, and support that makes it a *superior choice* (compared to v2.x) for most uses. If you are using v2.x, now may be a good time to switch to v3.x and enjoy the new Apps available in the App Store (<http://apps.cytoscape.org>).

A table describing Cytoscape support is presented in Section 8.

We are very excited to make this release, and hope you find it an indispensable tool in your research. To get you started, we have provided additional introductory material to get you started on the right foot, and we have also provided background material for general interest.

Please let us know how we're doing and how we can better advance your research!

The Cytoscape Team

## What to Do Next

We hope to help you use Cytoscape in the most productive way. Your next steps depend on how experienced you are with Cytoscape and what you would like to do. In the table below, please find the category that best describes you, and proceed accordingly.

Type of Cytoscape User	Where to Read Next
<b>New</b>	<b>For New Users</b> (Section 1)
<b>Casual</b>	<b>For Casual Users</b> (Section 2)
<b>Power</b>	<b>For Power Users</b> (Section 3)
<b>App Developers</b>	<b>For App Developers</b> (Section 4)
<b>General Interest</b>	Try getting oriented by reading: <b>General Background</b> (Section 5) <b>Cytoscape App Store</b> (Section 6) Then try browsing: <b>New Features</b> (Section 7) <b>Support Offering</b> (Section 8) <b>Future Plans</b> (Section 9) To get your feet wet, try: <b>For New Users</b> (Section 1)

# 1. For New Cytoscape Users

## What is Cytoscape?

Cytoscape is software that can help you visualize complex networks (as *graphs*) representing relationships between genes, proteins, or other entities. Cytoscape tracks and displays these entities (as graph *nodes*) and relationships between them (as graph *edges*). Cytoscape, per se, does not assign meaning to either nodes or edges – you can assign your own meanings to them, and you can add your own node or edge attributes (e.g., name, measurements, states, etc.) that customize your graph to represent semantics important to you. While Cytoscape provides simple analytics and visualizations, others are available as apps from the Cytoscape App store (see Section 6).

## What Do I Need Before I Can Use Cytoscape?

At the very least, you must provide Cytoscape with a list of nodes. You can also provide a list of edges and attributes. You can enter your graph manually or import it from your own files – Cytoscape supports a wide variety of file formats, including text and Excel. Cytoscape can also load pre-configured networks (e.g., from BioGRID) so you can leverage them without having to enter them yourself.

## Can Cytoscape Help Me Get Started?

Yes! The Cytoscape team had provided many resources tailored for all kinds of users (see Section 8). To start, there is an Installation Guide and numerous tutorials. Once you load your graph, you may find additional useful analytics and visualizations at the App Store (see Section 6).

## Which Cytoscape Version Should I Use?

Generally, you should use v3.3 (the newest version). v2.x has been in the field for several years and will be supported into the future, but over time, v3.x and successors will be better supported.

*Note that if you have already installed v3.0.0, v3.0.1, v3.0.2, v3.1, v3.1.1, v3.2 or v3.2.1, you can install v3.3 without uninstalling your previous version.*

## How to Download and Install v3.x

- Surf to <http://www.cytoscape.org>, click on the Download Cytoscape button, and follow the prompts
- ***Be sure to consult with the Release Notes (viewable via the Release Notes button) for issues and solutions pertaining to your installation***
- Surf to <http://www.cytoscape.org>, click on the Release Notes button, click on a User Manual link, and follow the instructions in the *Launching Cytoscape* section.

## How to Troubleshoot Cytoscape Installation?

Normally, the main requirement for installing Cytoscape is a Java Virtual Machine (JVM) appropriate for your workstation. For Windows users, the JVM commonly installed is a 32 bit version, even if the Windows itself is 64 bits. For Cytoscape use, the 64 bit version is recommended. For all workstations, Java 8 is required.

Regardless of your workstation operating system, you can learn whether your environment is sufficient to execute Cytoscape by following the Troubleshooting instructions at <http://www.cytoscape.org/troubleshooting.html>.

## 2. For Casual Cytoscape Users

*If you're confident of your Cytoscape skills, please read the Power Users information (Section 3).*

*If you're Cytoscape skills are rusty, please continue with the New Users information (Section 1).*

## 3. For Cytoscape Power Users

### Is v3.x for Me?

The answer is most likely yes! Most modern v2.x plugins have been converted to v3.x apps, and new v3.x apps are arriving in Cytoscape's App Store far more quickly than v2.x plugins (-- *app* is the v3.x name for the installable features known as a *plugin* in v2.x). To take stock, you can browse the App Store directly (Section 6). Note that some v2.x plugins have been incorporated directly into Cytoscape and need not be downloaded or installed. Consult the App Store to see a list of these apps.

*Note that v2.x plugins are not compatible with v3.x apps, and vice versa. If you rely on v2.x plugins that are not yet available for v3.x, you may need to remain with v2.x instead of upgrading to v3.x. Note, also, that the Cytoscape community is converting v2.x plugins to v3.x apps -- you might occasionally revisit the App Store to see if an app you need becomes available.*

### What's New in v3.x?

As described in the Welcome letter (above), v3.x incorporates a number of new features (Section 7) and productivity enhancing support offerings (Section 8), including the Cytoscape App Store (Section 6). The General Background section (Section 5) describes the rationale, advantages, and issues with v3.x.

### Will Support for v2.x Continue?

Cytoscape v2.x will be supported by the Cytoscape community for now, but with fewer upgrades and support options over time.

### Can I use v2.x and v3.x at the Same Time?

You can experiment with v3.x by installing it on your workstation – you can use both v2.x and v3.x on the same workstation.

### How to Prepare for v3.x

1. If you have already installed a v3.3 beta version, *please uninstall it before proceeding*. The Cytoscape v3.0, v3.1, and v3.2 versions can coexist with v3.3, and do not need to be uninstalled.
2. Consult the App Store (Section 6) to verify that the apps you need are available. Some apps have become part of the Cytoscape core, and you won't need to download them. Other apps are available in the Cytoscape App store.
3. Browse the New Features table (Section 7) to see what we have added since v2.x.
4. Browse the Future Plans table (Section 9) and Support Offering table (Section 8) to see where the Cytoscape community is going.

### How to Download and Install v3.x

- Surf to <http://www.cytoscape.org>, click on the Download Cytoscape button, and follow the prompts
- ***Be sure to consult with the Release Notes (viewable via the Release Notes button) for issues and solutions pertaining to your installation***
- Surf to <http://www.cytoscape.org>, click on the Release Notes button, click on a User Manual link, and follow the instructions in the *Launching Cytoscape* section.

### **How to Troubleshoot Cytoscape Installation?**

Cytoscape v3.3 requires Java 8, preferably with 64 bit support. You can learn whether your environment is sufficient to execute Cytoscape by following the Troubleshooting instructions at <http://www.cytoscape.org/troubleshooting.html>.



## 4. For Cytoscape App Developers

Cytoscape manages graph storage and display, and contains a number of common analytic and visualization functions. App Developers may write *apps* (formerly known as *plugins*) to perform problem-specific analytics, graph layouts, or other visualizations.

Before starting app development, you should be familiar with overall Cytoscape usage and functionality – see the Power Users section (Section 3) to start working with v3.x if you have not already done so.

Note that v2.x plugins do not work with v3.x. In order to get the benefits of improved stability, the Cytoscape team found it necessary to change the relationship between plugins/apps and the Cytoscape core. Many plugins have been ported to v3.x (see Section 6). The porting exercise is substantial, and once a plugin is converted to an app, it will continue to work at least until v4.0 is released – there is no v4.0 planned at this time. For more on this topic, see:

[http://wiki.cytoscape.org/Cytoscape\\_3/CoreDevelopment/Motivation](http://wiki.cytoscape.org/Cytoscape_3/CoreDevelopment/Motivation)

### Should I Convert My v2.x Plugin to a v3.x App?

Yes! Cytoscape v2.x will be supported by the Cytoscape community for now, but with fewer upgrades and support options over time.

### How Do I Get Started With App Development?

To get started with app development:

[http://wiki.cytoscape.org/Cytoscape\\_3/AppDeveloper/Cytoscape\\_App\\_Ladder](http://wiki.cytoscape.org/Cytoscape_3/AppDeveloper/Cytoscape_App_Ladder)

To convert a v2.x plugin to a v3.x app, refer to:

[http://wiki.cytoscape.org/Cytoscape\\_3/AppDeveloper/PluginPortingGuide](http://wiki.cytoscape.org/Cytoscape_3/AppDeveloper/PluginPortingGuide)

or

<http://f1000research.com/articles/3-150/v1>

For a broader view of the Cytoscape system (including the Core), refer to:

[http://wiki.cytoscape.org/Cytoscape\\_3/CoreDevelopment](http://wiki.cytoscape.org/Cytoscape_3/CoreDevelopment)

### Are there App Samples?

Yes! See:

[http://opentutorials.cgl.ucsf.edu/index.php/Tutorial:Creating\\_a\\_Simple\\_Cytoscape\\_3\\_App](http://opentutorials.cgl.ucsf.edu/index.php/Tutorial:Creating_a_Simple_Cytoscape_3_App)

Also note the App Cookbook:

[http://wiki.cytoscape.org/Cytoscape\\_3/AppDeveloper/Cytoscape\\_3\\_App\\_Cookbook](http://wiki.cytoscape.org/Cytoscape_3/AppDeveloper/Cytoscape_3_App_Cookbook)

## 5. General Background

The overall mission of Cytoscape is to be a freely available worldwide asset supporting network analysis and visualization for systems biology science.

The major focus of v3.x is the modularization and rationalization of code to solve stability issues in v2.x encountered as multiple developers pursued multiple agendas. Under v2.x, internal programmatic interfaces evolved from one release to the next, leading to the failure of working plugins over time and negative interactions between otherwise working plugins. Ultimately, this resulted in loss of programmer and user productivity, and undermined community confidence in Cytoscape.

v3.x addresses these issues by adopting modular coding practices promoted by the OSGi architectural framework<sup>1</sup>. This enables both the Cytoscape core and externally developed apps (formerly called *plugins*) to evolve independently without compromising unrelated functionality. At the logical level, Cytoscape leverages OSGi precepts to produce v3.x APIs having cleaner and clearer demarcations between functional areas. At the deployment level, OSGi enables on-the-fly substitution of one processing element for another (e.g., apps) in order to tailor Cytoscape to meet user requirements at runtime without reinstalling or reconfiguring Cytoscape.

Creating v3.x occupied an international team of engineers for over a year, and represents a strong investment toward reducing future development and support costs, and increasing reliability and evolvability. With the completion of v3.x, we expect to leverage v3.x as a platform to satisfy the evolving needs of multiple stakeholder groups, and as a platform enabling research on leading edge analysis and visualization techniques. v3.x is the intended successor to v2.x, with development and support of v2.x expected to diminish and disappear over time in favor of v3.x.

We believe that users will benefit most directly from the v3.x by:

- experiencing fewer core and app bugs from one release to the next
- the availability of more and richer apps (due to developers spending less time tracking and fixing bugs)
- more core features with higher biological and logistical value (due to improved flexibility provided by interface-driven development)

During the creation of v3.x, a number of features were added, as listed in the New Feature Table below.

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<sup>1</sup> [www.osgi.org](http://www.osgi.org) – also used as the basic framework for Eclipse and numerous commercial products

## 6. The Cytoscape App Store

The Cytoscape App Store is new in v3.x and targets broad demographics through specific features:

Cytoscape User	Benefit
<b>New or Casual</b>	Find Cytoscape functionality easier via familiar paradigms of search and tag navigation
<b>Power or Frequent</b>	Find and install apps easier and provide crowdsourced rating and reviews
<b>App Developers</b>	Have a dedicated presence for their work, including a direct line to their users and critical statistics to justify their development on the Cytoscape platform.

Furthermore, the App Store supports contests and social incentives that encourage critical technical and community development, including porting, analytics, rating/reviewing, and so on.

Note that the App Store supports only Cytoscape v3.x and does not contain plugins compatible with earlier Cytoscape versions. Likewise, plugins that work with earlier versions are not compatible with v3.x – the App Store (<http://apps.cytoscape.org>) contains a list of apps available for v3.x.

To access the App Store from Cytoscape, access Cytoscape's new Apps menu and choose the App Manager menu item.

## 7. New Feature Table

Feature	Beneficiary	Manual Section
<b>Fast Network Analyzer</b>	All users	18. NetworkAnalyzer
<b>Filtering on adjacent nodes' values</b>	Power users	12.2 Filters
<b>New network/table importer</b>	All users	6. Creating Networks
<b>Prefuse layout w/GPU support</b>	Power users	13. Navigation and Layout
<b>New group settings/visualization</b>	Power users	6.4.3 Grouping nodes
<b>Better default network layout</b>	All users	13. Navigation and Layout
<b>Consistency improvements</b>	New users	
<b>Modular Cytoscape (via core apps)</b>	All users	3. Launching Cytoscape
<b>App update detection</b>	All users	15. App Manager
<b>Cytoscape as a service (via cyREST)</b>	Power users	25. Programmatic Access
<b>Java 8 now required</b>	All users	3. Launching Cytoscape

## 8. Support Offering Table

Feature	Purpose	Beneficiary	URL
Cytoscape Google Groups Helpdesk Discuss	Community response on best effort basis	All users	<a href="mailto:cytoscape-helpdesk@googlegroups.com">mailto:cytoscape-helpdesk@googlegroups.com</a> <a href="mailto:cytoscape-discuss@googlegroups.com">mailto:cytoscape-discuss@googlegroups.com</a>
User Manual	Comprehensive manual	All users	<a href="http://wiki.cytoscape.org/Cytoscape_3/UserManual">http://wiki.cytoscape.org/Cytoscape_3/UserManual</a>
Installation Guide	Cytoscape installation	New/Casual users	Section 3 of <a href="http://wiki.cytoscape.org/Cytoscape_3/UserManual">http://wiki.cytoscape.org/Cytoscape_3/UserManual</a>
Tutorials	Streamlined productivity	All users	<a href="http://opentutorials.cgl.ucsf.edu/index.php/Portal:Cytoscape3">http://opentutorials.cgl.ucsf.edu/index.php/Portal:Cytoscape3</a>
Presentation Slides on Web Site	Enable casual learning	All users	<a href="https://speakerdeck.com/cytoscape">https://speakerdeck.com/cytoscape</a>
Code Snippets	Commonly used App development code	App Developers	<a href="http://wiki.cytoscape.org/Cytoscape_3/AppDeveloper/Cytoscape_3_App_Cookbook">http://wiki.cytoscape.org/Cytoscape_3/AppDeveloper/Cytoscape_3_App_Cookbook</a>

## 9. Future Plans Table

Feature	Purpose	Beneficiary	Timeframe
<b>Core workflow</b>	Enable symbol translation as networks/tables are imported	Power users	Apr 2016
<b>Distributed computing</b>	Link to NDEx and other external storage and compute services	All users	Apr 2016
<b>Additional Visualizations</b>			TBD
<b>Additional Analytics</b>			TBD
<b>Wallpaper Collection</b>	Publicize good results associated with Cytoscape	All users, potential users, general public	TBD
<b>Cytoscape Clinics</b> New/Casual User Power User App Developer	Chat rooms give instant response based on community availability	All users	TBD

## 10. Issues Addressed

The following issues were addressed in v3.3. Details for each issue can be found at Cytoscape's RedMine issue repository:

<http://code.cytoscape.org/redmine>

Issue	Description
1866	Design and implement Text Encoding/Decoding Policy
2360	Adjusting an edge handle also moves selected nodes
2388	Import Network From File or URL: a bug that allows an app developer to make it unusable
2480	Rows of deleted nodes/edges are displayed in the Table Panel
2498	Cut option not available from menubar Edit menu for edges
2518	Cytoscape commands use "attribute" for node/edge/network, but "column" for table
2521	Error not displayed when app fails to install in App Manager
2541	Cytoscape-Specific Functions
2567	Need way to export only certain visual styles...
2573	Incorrect custom graphics width
2591	Create families of styles that can seed a style library
2658	Cytoscape does not import empty columns from an .xml file
2754	Support the use of Java core libraries not included in default Karaf environment
2756	Style selector (UI) is too long
2787	Remove Duplicate Edges appears unresponsive, extremely slow on large networks
2821	Some uses of Java Stream libraries do not explicitly specify UTF-8
2833	Subsequent import from excel files does not clear the import table (preview does not show all sheets)
2865	Custom Graphics Size Visual Property has no effect to charts
2867	SVG Export function is not fully functional
2907	Enable GraphML Writer
2908	Provide support for compound node visualization using groups
2910	AggressiveHeap not allocating sufficient memory on Java 8
2931	CollapsiblePanel does not look good on Nimbus LAF
2932	Advanced Network Merge dialog does not have consistent UI
2934	Tunables Group Labels (panel titles) should not be colored
2936	Table Merge dialog looks unprofessional
2937	Set Preferred Layout UI is more complicated than it should be
2938	The toolbar search field should have the Mac OS X style
2939	Cytoscape UI has some inconsistencies
2957	attribute file loading issue
2960	Import Network from Web Service UI is not consistent with Cytoscape's LAF
2964	Focus issues with modal dialogs on Mac OS X with Java 7
2977	Removing custom graphics in visual mapper
2990	Feature Request: Label Width property for edges
3001	Support Bypass in Web Session Exporter
3030	Bypass does not work for Label Width property
3033	Improve support for multiple renderers.
3034	API changes for multiple renderers

3035 Update layout API to support Z coordinates.  
3036 Add support for 3D to BioLayoutFRAAlgorithmTask  
3037 Allow a VisualLexicon to hide visual properties.  
3038 "New network from selection" button always creates a DNetworkView  
3039 Import network dialog should allow you to choose the renderer.  
3043 The Style GUI shows Dependencies that are not supported by the current renderer  
3044 The Style GUI shows discrete visual property values that are not supported by the current  
renderer  
3045 New Empty Network dialog should allow you to choose the renderer  
3048 CyApplicationManager should have a method that returns all the registered  
NetworkViewRenderers  
3051 VizMapper does not properly support multiple visual lexicons  
3052 Dialogs lack default ENTER/ESC key mappings  
3053 Deleted nodes and edges still show up in table browser  
3055 Error loading GML with edge "directed" attribute  
3058 Sometimes collapse/expand of CompoundNode doesn't result in CompoundNode visualization  
3059 CyGroupSettings needs an API  
3060 Group settings need to be serialized/deserialized with sessions  
3061 When doing compound nodes, should automatically do implicit collapse/expand on creation  
3065 Field labels sometimes end in a colon, sometimes don't  
3069 Degree filter not functioning  
3071 CSV file fails to import with "loading network from table: input length=1" error  
3073 Open File Problem  
3075 Add an edge after creating a group deletes edge when group is collapsed  
3078 Make galFiltered easier to find  
3079 Read and write GraphViz ".dot" files  
3080 Cannot import CytoscapeJS JSON file  
3082 Error saving session with CyProperty that has SESSION\_FILE\_AND\_CONFIG\_DIR save policy  
3083 Compound nodes not getting visualized properly when the session is loaded  
3084 Moving a node within a compound node that is within a compound node leads to some  
strange movement of first-level compound node  
3088 integration tests need to set GroupView property to work correctly  
3089 Paths with backslashes don't work properly with -N option (and perhaps others)  
3092 Batch Analysis fails if input directory has invalid network file  
3094 Tunables GUI is not consistent  
3095 Groups: nodes inside compound nodes are missing labels  
3096 Groups: strange rendering of compound node  
3113 Need to fix Preferred Layout settings  
3115 Copying Biogrid files on initial startup extremely slow with network-mounted home directory  
3117 Adding new CyNetwork with no name to CyNetworkManager does nothing  
3118 Installable / Upgradable Core Apps, make NetworkAnalyzer an external app  
3120 Startup check for installed apps  
3121 Core-wide logging mechanism for non-fatal errors  
3122 Report app failures to users  
3123 Improve table loader UI  
3125 Implement compound node ?visualization? .. toward multiscale networks  
3126 Reference implementation for alternate renderers, incl docs, recipes, samples



3128 Update documentation, tutorials for 3.3  
3130 Marching ant animations on edges  
3131 Merge cyREST / REST commands into single REST implementation  
3134 Case sensitive checkbox for table import doesn't work  
3136 XGMML Writer creates "real" type for Long column data  
3137 Unable to specify "key column for network" when importing a table to "to selected network only"  
3138 If you chose Edit -> Preferences -> Group Preferences -> Visualization for gorup = Show group node you loose style on expanded group  
3139 Unable to get rid of group "single node" representation once a group has been drawn that way.  
3140 Group edges missing names  
3141 Group attribute aggregation not working  
3142 Group Node does not disappear after collapse and expand  
3143 Cloned network with groups adds all the group nodes to the network  
3144 Diffrent representation of group edges when using "None" vs "Show Group Node"  
3145 Save session with groups on session restore groups are gone  
3147 Need some way to change the shape for compound nodes  
3148 Need some way to set the amount of padding for a compound node  
3150 Group aggregation preferences - added options  
3154 Custom Graphics Manager and Charts Editor are hard to find  
3157 InstallAppsPanel updated outside Swing thread, causing occasional exceptions  
3159 Change CyStatusBar icon if error/warning occurs  
3170 Move X axis line in bar chart to x=0  
3179 Layout with empty context causes warning dialog to appear at startup  
3180 Command network import file doesn't provide a way to indicate column type  
3181 Command line versions of network import file and network import url are broken  
3182 Function Builder UI has some issues  
3186 Missing Negate operator on filters  
3187 Table merge shouldn't allow non-Integer/String columns to be selected as keys  
3191 "Import Network from Table" ignores node identifier mapping column, always uses name/shared name  
3193 Save layout settings  
3197 Unable to retrieve the value of the Edge Target Arrow Shape property if set by style default  
3199 Table preview does not reflect data used for import  
3202 Table import doesn't display errors for values that are incompatible with selected column type  
3204 Control font size on cychart domain and range labels  
3205 When hiding nodes or edges they should be unselected  
3207 Error/warning icon persists after pop-up dialog  
3208 Filters pane is missing Topology Filter available in v2.x  
3209 Warning displayed on load when reloading any session saved with 3.3.0-SNAPSHOT  
3211 The value attributed to a Visual Property may not be the right type  
3213 JSON reader should accept output from Cytoscape.js cy.json() method  
3215 Improved arrow selection and control  
3217 Show selected (hide unselected elements)  
3218 Don't reset size on 'Show text file import options'  
3223 App dependencies not resolved for updates, causing some not to load properly

3225 Add extra option for JSON export (Network JSON files + Style JSON in one zipped file)

3227 Impossible to assign custom VisualStyle within NetworkReader

3231 Calling TaskMonitor.setTitle() has different effect on second call

3236 Default layout for new network view

3237 Confirm dialog for creating view with new large network

3239 Missing all group edges on collapse groups in cytoscape 3.3 snapshot (cytoscape-3.3.0-20150806.205609-608)

3240 If node attribute file is not UTF-8 encoded it is hard to determine why file is not loaded properly

3245 Creating a copy of a VisualStyle--VisualPropertyDependencies not copied

3246 CyServiceRegistrar always uses service-api BundleContext, allowing registered services to outlive bundle

3254 Edge weighted layouts always use "Heuristic" for weight type.

3255 Exception thrown when hiding certain nodes

3258 Add group column aggregation option for lists

3260 Update Cytoscape.js library in the template to the latest version

3261 Error message displayed at bottom of TaskDialog

3264 File->Recent Session doesn't report errors to user

3266 Layout Settings should be restored on startup

3268 Numeric equations have nonsense requirements

3278 Equations chained in integer columns cause bogus error.

3279 Loading a table bug

3280 NullPointerException when creating a CyNetworkReader

3282 Column filter does not update properly when switching column type.

3286 Column filter slider has erratic behaviour.

3289 Create a Cytoscape Palette

3290 New transformers for Chain tab

3291 Unable to right click in mapping area

3296 Exception on loading .cys file

3297 Recent session list should have some reliable order

3300 Filters UI cleanup

3301 Remove pre-java-5 dependencies (org.jdesktop.layout)

3302 Opening recent session in Welcome Screen does not show confirmation dialog

3305 Install from File doesn't test for app compatibility

3306 Console window has lots of cyREST warnings during startup

3311 Core apps should have description on App Store/App Manager

3312 Core apps should have more concise titles

3314 Create description in App Store / App Manager for BioPax core app

3315 Create description in App Store / App Manager for Command core app

3316 Create description in App Store / App Manager for cyREST core app

3317 Create description in App Store / App Manager for BioGrid core app

3318 Create description in App Store / App Manager for Network Analyzer core app

3319 Create description in App Store / App Manager for Network Merge core app

3320 Create description in App Store / App Manager for PSI-MI core app

3321 Create description in App Store / App Manager for SBML core app

3322 Create description in App Store / App Manager for BioMart core app

3323 Create description in App Store / App Manager for PSQUIC core app

3324 Create description in App Store / App Manager for Welcome core app  
3326 Topology filter bad performance  
3327 Arrange edge interaction default to be "interacts with" instead of "pp"  
3328 Can't load 3.2 topology filter in 3.3  
3330 Performance issues with nested topology filters  
3332 MITAB files in new version of BioGRID not parsed correctly  
3333 Filter Chain tab is not cancellable  
3337 HTML not parsed in task status dialog  
3340 Submit 3.3.0 core app versions to App Store  
3345 create arrow annotation throws NPE  
3348 External Links context menu throw exception when used on group node  
3351 Views appear zoomed in after importing network  
3352 Network windows have large border on OS X 10.11 El Capitan  
3354 basic installing/compiling not working  
3356 Cannot disable menu items in network view context menu.  
3364 Color-based continuous mapping uses incorrect min/max values  
3365 OpenCL Prefuse layout intermittently hangs on retina MacBook Pro  
3366 Update default and custom node styles for galFiltered  
3369 Create description in App Store/ App Manager for CyCL core apps  
3371 FitContent() is not properly applied to dummy view in Edge Bend Editor  
3374 Species images are mislabeled  
3377 Invisible vertical slider  
3384 Remove duplicated edges -> doesn't delete duplicated self edges  
3385 By default, the delimiters for importing a network or table from TXT files are TAB and SPACE