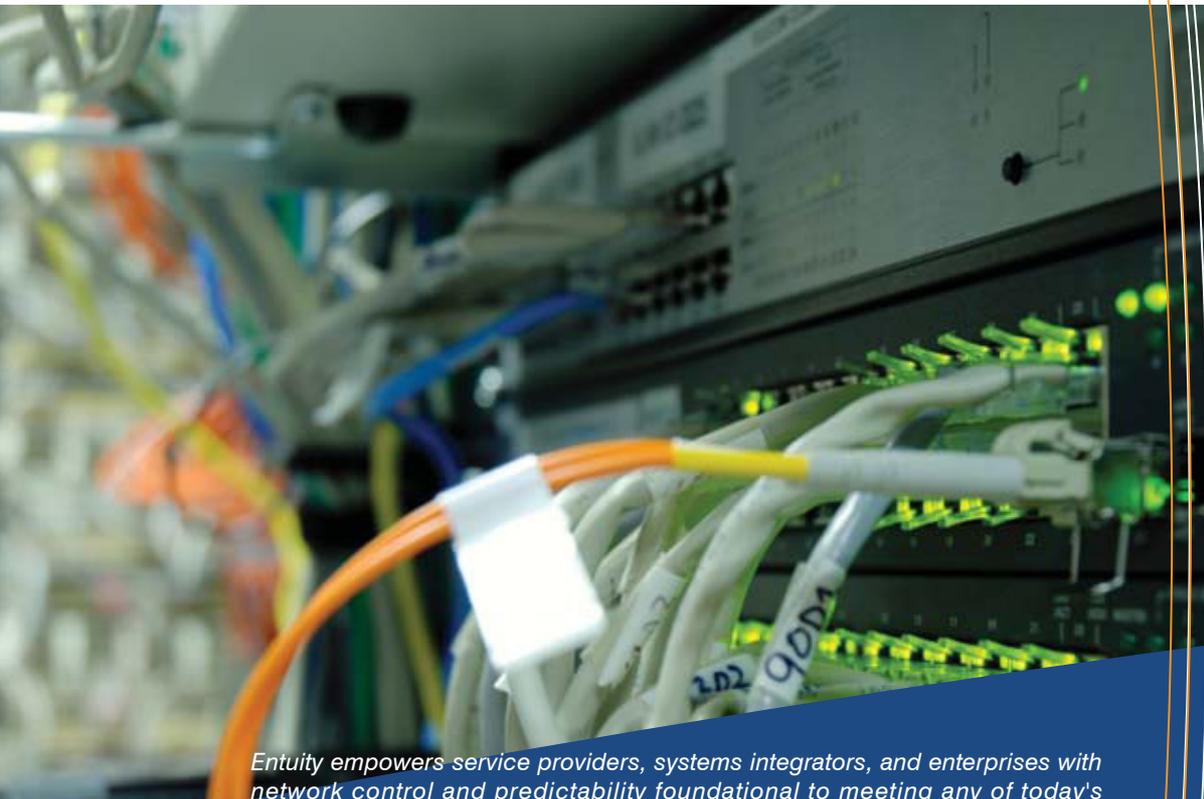# Entuity® 15.5
Entuity Migration Guide

Entuity empowers service providers, systems integrators, and enterprises with network control and predictability foundational to meeting any of today's complex IT infrastructure challenges. Entuity provides a succinct suite of the most important functionality for network management – inventory, fault, and performance management – but presented in an easy to use, quick to deploy format.

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1 Entuity 15.5 Migration Overview

This migration guide covers issues for users migrating from earlier versions of the Entuity software to Entuity 15.5 GA (General Availability).

> ⚠ Before you upgrade to Entuity 15.5 you are strongly recommended to back up your current installation; the Entuity 15.5 upgrade process does not include a rollback facility.

Migration Prerequisites

Before installing Entuity 15.5 you should read its accompanying:

- *Known Issues* note which details open Issues and resolutions.
- *Release Notes* which identifies for you new, changed and removed functionality.

This Migration Guide, the Known Issues note and the Release Notes are all available from the Entuity Customer Portal. If you require login credentials for the Customer Portal please contact your Entuity representative for assistance.

You can find detailed install and configure instructions in the *Entuity Getting Started Guide*. The *Getting Started Guide* and *Release Notes* are available at the root of the supplied Entuity installation DVD or ISO image.

When migrating from Entuity 14.0 or earlier you should also read the *Release Notes* and *Migration Guide* of intermediate releases, for example Entuity 15.0.

Entuity 15.5 Licenses

You must obtain from your Entuity representative an Entuity 15.5 license; licenses valid with earlier versions of Entuity are not valid with Entuity 15.5.

Entuity 15.5 Multi-Server Environments

Entuity does not prevent you using different versions of Entuity to manage your network, and where these servers run independently of each other, or you directly log onto them, you can continue to use them without issue.

If during the migration process you have a consolidation server running a different version of Entuity to one or more of its remote servers then you will not be able to access data on those specific remote servers through the consolidation server. The implementation of views in Entuity 15.5 is incompatible with the previous view implementation. The servers themselves can be accessed directly and do continue, for example, to collect data. When both consolidation and remote servers are upgraded to Entuity 15.5 then the remote servers would again be accessible through the consolidation server.

If you require further guidance on migrating multiple Entuity servers to Entuity 15.5 please contact your Entuity Support representative.

System Requirements and Shipped Software

Entuity 15.5 server is only certified for use with the 64-bit English edition variants of:

- Red Hat Enterprise Linux ES version 6
- Oracle Linux 6
- Windows Server 2008 R2
- Windows Server 2008 SP2
- Windows Server 2012
- Windows Server 2012 R2.

Table 1 Minimum Server Specifications provides a by component breakdown of the minimum requirements for each of the device-port management bands:

- High, 1000 devices and 70000 ports.
- Intermediate, 800 devices and 50000 ports.
- Low, 400 devices and 25000 ports.

There is no change from Entuity 15.0 to Entuity 15.5.

Server Component	Low	Intermediate	High
Minimum CPU Clock Speed	2.5 GHz	2.5 GHz	2.5 GHz
Intel Processor Family (or equivalent)	Xeon E3 Family	Xeon 5000 Sequence	Xeon E5 Family
Minimum No Cores	4	6	12
Windows Minimum Physical Memory	6 GB	12 GB	24 GB
Linux Minimum Physical Memory	8 GB	16 GB	32 GB
Disk Capacity	60 GB	90 GB	120 GB

Table 1   Minimum Server Specifications

Changes to Shipped Third Party Software Versions

Product	Entuity 15.0 GA	Entuity 15.5
Apache Tomcat	7.0.56	7.0.62
Apache HTTPD	2.4.10	2.4.12
Groovy	1.0	2.4

Table 2   Third Party Software Versions

Product	Entuity 15.0 GA	Entuity 15.5
JRE	1.7.0_72	1.8.0_45
MariaDB Server	10.0.14	10.0.16
MariaDB Library (libmariadb)	2.0.0	2.1.0
MariaDB Java Client	1.1.7	1.1.8
OpenSSL	1.0.1j	1.0.2a

Table 2   Third Party Software Versions

Entuity Web UI System Requirements

The Entuity web UI is certified for use with:

- Internet Explorer 10.0 or later
- Firefox 24 ESR (Extended Support Release) or later
- Google Chrome 35 or later releases.

Users must enable their web browsers for both JavaScript, for example to allow the working of the Entuity menu structure, and cookies, for example to maintain their login status.

Entuity 15.5 Migration Path

The certified migration paths to Entuity 15.5 are from:

- Entuity 14.5 Patch 4
- Entuity 15.0 Patch 2.

You can check the Entuity Support site for the latest patches.

> If you are upgrading to Entuity 15.5 from a version of Entuity or patch level that is different to the certified migration path please contact Entuity Support for guidance.

Entuity Version and Patch Level

To check the current version and patch level of an Entuity server:

1) From the Entuity server click **Help > About Entuity**.

    Entuity displays server details, including release version and patch details, for example:

    ```
    Entuity 15.0 Patch (P02)
    ```

To install a patch to an Entuity server:

1) From the Entuity customer support site download the patch file to a temporary location.

2) Stop the Entuity server and take a backup.

3) Apply the patch using the patch installer, *entuity_home*\install\installPatch, for example:

```
installPatch c:\temp\ENTUITY_15.0.P02.WinNT.patch
```

4) After installing the patch run `configure`. The patch is only applied once `configure` successfully completes.

5) Restart the Entuity server.

Event Project Deployment

Entuity 15.5 has an updated Event Management System (EMS) event project, that for example includes:

- A new SNMP Trap Send action.
- User Defined Polling events and incidents.
- Cisco Unified Computing System (UCS) events and incidents.

When you upgrade Entuity the new event project is available but it is only applied to the installation when it is deployed.

If you have customized your current event project then use the new Merge tool that is available from the EMS Project History page. It identifies differences between two selected projects. You can then choose how to resolve conflicts between the two. On completion it creates a new event project ready for deployment (the two source projects are not changed).

Migrating to Entuity 15.5

Installing Entuity 15.5 is the same process whether migrating from Entuity 15.0 Patch 2 or an earlier supported version of Entuity. When migrating from Entuity14.5 Patch 4 you only need to install Entuity 15.5; you do not first install Entuity 15.0. Ensure you:

- Are migrating a server on the migration path. (See *Entuity Version and Patch Level*.)
- Read *Chapter 2 - Entuity 15.5 Migration*.
- Have an Entuity 15.5 license.

To migrate to Entuity 15.5:

1) Stop the Entuity server and take a backup.

2) Run `install` to install Entuity 15.5. You should add the new license before running `configure` (by default the license is installed to *entuity_home*\etc).

3) Run `configure`. After `install` completes you are prompted to continue with the installation process.

4) Restart the Entuity server.

5) Deploy the updated event project or apply the changes within it to your current project.

2 Entuity 15.5 Migration

The main considerations for users upgrading to Entuity 15.5 are:

- Views and User Access Control
- Groovy Script Version Change
- Removed Support for TLS 1.0
- Deprecated Daily Event Summary Streams.

> ⚠️ Before you upgrade to Entuity 15.5 you are strongly recommended to back up your current installation; the Entuity 15.5 upgrade process does not include a rollback facility.

Views and User Access Control

Entuity 15.5 includes a major enhancement of views, with the content of a view now being the same for all users accessing it, with new mechanisms for building views and controlling user access to those views, updated view tool permissions and new view reports.

The upgrade process automatically migrates your current view structure, and user access to content in those views, to the new view structure. Before upgrading to Entuity 15.5 users are strongly advised to:

- Consult this *Entuity 15.5 Migration Guide* to understand and prepare for view migration.
- Review how you are currently using Entuity views and access permissions. The more you have used ACL and Non-ACL views to control user access to content the more carefully you will have to consider how to prepare your current server before migrating to Entuity 15.5.
- Ensure your current Entuity server is patched to the correct level.

  A correctly patched server will include the View Migration report which is an important tool in preparing your current install for migration to Entuity 15.5.

- Run through the migration in a test environment.
- Always take a full backup before migrating to Entuity 15.5.
- Contact your Entuity Support representative if you have any questions about, or require guidance on, the migration process.

Views Summary

The key changes to views in Entuity 15.5 are:

- All views now act as Access Control List (ACL) views, non-ACL views are not supported and will be converted to ACL views during the migration process, therefore
  - Different users accessing the same view will always see the same objects, whereas previously visible view content would potentially have varied according to their Access Control List setup.

- The distinction between the two view types and the terminology are dropped. The padlock icon now represents a view that the current user cannot edit.

- Reference views are not available in Entuity 15.5. The new base view facility can deliver similar functionality.

  A reference view was really a different path to the same view. For example if view1 had the sub-view2 and viewA was then assigned a sub-view that was a reference to sub-view2, you had not increased the number of views on your server. Instead there were now two paths to the same sub-view, **view1>sub-view2** and **viewA>sub-view2**.

- The option to make a view Visible or Not Visible to a user group is removed. Previously an administrator may have assigned views to a user, so they had access to objects in those views, but not made the views themselves visible.

  On migration these Not Visible views are made visible.

- A new All Objects view:

  - Is a system view with the owner **system**.

  - Contains all objects under management of the Entuity server.

  - By default can only be accessed by members of the administrators user group. Administrators can assign access and edit permissions to other user groups. Those non administrator users with edit permission to the All Objects view can only edit it, i.e. assign access to other user groups, if they have the Share View permission.

  - Contains all services under management of the Entuity server.

  - Is always displayed at the top of the Explorer tree and at the top of any other listing of views in Entuity.

  - Has the internal view id of 1, which was previously the My Network view id. If you have used this id, for example when specifying Flex Reports or when forwarding events and incidents then you may see a change in behavior depending upon the permissions of the associated user account. When used with a user that is a member of the administrators user group there will be no change in behavior however when used with non-administrators the view would now include all objects whereas previously it would only have included objects to which the user had access.

- A revised implementation of the My Network view, where each user has their own My Network view:

  - With their username appended to it and enclosed in brackets, e.g. My Network (jamessmith), My Network (nanatoure).

  - That contains all objects that a user can view. It does not determine what a user can view, i.e. it is a union of all other views associated to the user and therefore its content is not directly editable.

  - That is sorted towards the top of any view listing in Entuity but below the All Objects view. If an administrator is viewing all private views then My Network views are sorted alphabetically.

  - That is now a Private view. It is only accessible to that user (and system administrators if they set their user preference to show private views).

  - Which cannot be used as a base view because the contents of a My Network view can

change dynamically and would create cyclic dependencies since a user's My Network view is calculated by making every other view of that user a base view for it.

- New concept of base views. A base view is one on which another view is based. All views apart from My Network views can act as a base view, however Entuity will prevent circular dependencies.
- A view can be based on more than one view and users can select whether the content of the new view is derived from the union or intersection of objects in the selected views:
    - Union, results in a view that contains all of the objects in the selected views.
    - Intersection, results in a view that contains only the objects that are in all of the selected views.

    If you alter the contents of a base view or remove a view from a union/intersection definition this alters the resultant view. Entuity does warn when deleting a view that it may impact other views, it does not warn if you edit a view.

- A user's default view is now a user preference setting. Factory default is the user's My Network view.
- A user with access to a Parent view can now access all of the Child views implicitly, whether they have explicitly been given access or not.
- A user with access to a Child view will now see the Parent view in the Explorer tree, but depending upon their permissions may not see content in that view. These parent views allow users to navigate to the child view to which they do have access.
- When Explorer is in Consolidation mode a new All Servers icon in the tree:
    - Indicates servers' views are consolidated.
    - Provides a base from which to create new top level views and to move or copy existing sub-views back to the top level (when in consolidated mode).
    - Provides a method for clearing the current selection (which is why it is available when there is only a single server) which is not otherwise easy to do, but sometimes desirable.
    - Removes the requirement for the **Create new top level view** icon, so it is removed.
- Green It Perspective used the My Network view, which varied depending upon the user running the perspective. In Entuity 15.5 the Green IT Perspective uses the All Objects view and is therefore consistent for all users.

View Migration Preparation

Entuity 15.5 involves major changes to how views operate and how user access to objects in those views is controlled. Before attempting to upgrade to Entuity 15.5 you should always run the View Migration report which will identify the migration status of every view on a server. However you can expect that where you configured view and user access control by:

- Only using ACL views, or assigned all users access to all managed objects, then automatic view migration would result in users having the same access permissions after migration as before migration.
- Using hidden ACL views to assign access permissions to users and using non-ACL views for users to access managed objects then after migration:

■ All Non-ACL views would have been converted to ACL views.

■ All previously hidden ACL views would be visible.

Users that previously might only have had access to a subset of objects in shared Non-ACL views would now have access to all objects in those views (the objects in the migrated view being determined by the permissions of the view owner).

Reference views create alternative view paths to the same view. Reference views are not supported in Entuity 15.5 so the Entuity 15.5 migration:

■ Converts each reference view to a sub-view that uses the original referenced view as its base to determine its contents. Changes in the base view therefore automatically appear in the new migrated view.

■ Does not migrate sub-views of the referenced view. If you require the same view hierarchy then before you migrate to Entuity 15.5 create a copy of the referenced view and its view hierarchy.

View Migration Report

You run the View Migration report on your current Entuity installation to check its view setup for issues that may cause the migrated view and user access control setup to behave significantly differently than before. The report comprises of:

■ A first page that details the type of checks made and suggested potential actions for each state.

■ Subsequent pages that report the results of those checks against each view on the server.

To run the View Migration report:

1) Click **Reports**.

2) Click **Administrative Reports**. Entuity displays the list of available reports.

3) Click **View Migration**.

4) Select the *Output Format,* e.g. **HTML**, and then click **Run**.

Entuity Report
View Migration

Server	View	ACL	Reference	User Groups	Migration Status
ENTLONPPVM01	shared non-acl view	No	No	entuity	❌ Shared non-ACL view
ENTLONPPVM01	Europe/New York REF	Yes	Yes		⚠️ Reference view
ENTLONPPVM01	Europe/New York REF/Brooklyn	Yes	No		⚠️ Child of a reference view
ENTLONPPVM01	My Network	No	No		⚠️ Special case: duplicated for each user Private non-ACL view
ENTLONPPVM01	private non acl view	No	No		⚠️ Private non-ACL view
ENTLONPPVM01	restricted access view/not so restricted	Yes	No	entuity	⚠️ Some groups with access do not have visibility
ENTLONPPVM01	All Objects	Yes	No		✅ Ok
ENTLONPPVM01	All Objects/Regional Copy	Yes	No		✅ Ok
ENTLONPPVM01	Europe	Yes	No		✅ Ok
ENTLONPPVM01	Europe/Berlin	Yes	No		✅ Ok
ENTLONPPVM01	Europe/London	Yes	No		✅ Ok
ENTLONPPVM01	New York	Yes	No		✅ Ok
ENTLONPPVM01	New York/Brooklyn	Yes	No		✅ Ok
ENTLONPPVM01	Regional	Yes	No	All Users	✅ Ok
ENTLONPPVM01	Regional Infrastructure	Yes	No	All Users	✅ Ok
ENTLONPPVM01	restricted access view	Yes	No		✅ Ok

Figure 1   View Migration Report

The Migration Status of each view indicates the type of issue discovered, you can refer to the first page of the report (or the following sections) for suggested actions to resolve each issue. You can:

- Run the report as often as is required.
- Access the generated reports after upgrade to Entuity 15.5 through the server file structure.
- Not run the report after migrating to Entuity 15.5, however Entuity 15.5 does include a report for you to check your view and user access control setup, the View Permissions and User Access Control report.

Migration Status: Shared non-ACL view
A shared non-ACL view would show different content according to the access permissions of the user. After migration to Entuity 15.5 all users with access to the view would now have access to all objects in that view; the content of a shared non-ACL view after migration will depend upon the owner of that view. If this is acceptable then no action is required. If this is not acceptable then before you upgrade you can:

- Delete the view.
- Remove access to all non-administrator groups.

■ Modify the view contents to only contain those objects that you wish to grant access to.

Migration Status: Special case: duplicated for each user

Pre Entuity 15.5 each server has one My Network view, although the objects a user can access is dependent upon their access permissions. In Entuity 15.5 each user has their own My Network view that only contains the managed objects for which they have permission to access.

Report schedules that run against the My Network view will be migrated to the My Network view of the user that created the schedule. If you do not want the report schedules to run against a user's private My Network view you should do one of the following:

■ Edit the report schedule and change the view it runs against.

■ Delete the report schedule.

■ Suspend the report schedule and decide what action to take after upgrading.

Migration Status: Private non-ACL view

These views are only accessible by their owner and members of the administrators group. They will be converted to have the same content as their owner currently sees in them. If this is not acceptable then you may wish to do one of the following prior to upgrade:

■ Delete the view.

■ Change the view to be an ACL view. This will give the owner access to all objects within it.

Migration Status: Reference view

Reference views create alternative view paths to a view. Reference views are not supported in Entuity 15.5. Entuity 15.5:

■ Migrates each reference view to a sub-view that uses the original referenced view as its base to determine its contents. Changes in the base view therefore automatically appear in the new migrated view.

■ Does not migrate sub-views of the referenced view. If you require the same view hierarchy then before you migrate to Entuity 15.5 create a copy of the referenced view and its view hierarchy.

Migration Status: Child of a reference view

Entuity 15.5 view migration only migrates top-level reference views, it does not migrate any sub-views of a reference view. These views are still available but only through the original (referenced) view path.

Where the child of a reference view is used, for example in report schedules, then the schedule will remain assigned to that view but the view path will be amended from that using the reference view to that using the original view.

If you wish to maintain the hierarchy that currently exists under a reference view you will need to create a copy of the referenced view instead of a reference to it.

Migration Status: Some groups with access do not have visibility

This is an ACL view where one or more of the user groups that have read access to it do not have visibility on the view itself. This means members of those groups have access to the contents of this view, but will not see this view in their view hierarchy. The ability to have read access but no visibility is not supported in Entuity 15.5.

After migration some users may see this view in their view hierarchy when they did not see it before. If this is not acceptable then you can do one of the following prior to upgrade:

- Delete the view.
- Change the user groups that have access to the view.
- Change the users that are members of the user groups that have access to the view.

After upgrading to Entuity 15.5 through their preferences settings users can choose to hide any combination of views they want to.

Migration Status: Ok

View will migrate without significant change of functionality. No action is required prior to upgrade.

Check Entuity 15.5 View Migration

On running Entuity 15.5 `install` users are warned that the view implementation is revised in Entuity 15.5 and reminded again to consult this migration guide.

Figure 2   Install Migration Warning

After migrating to Entuity 15.5 you can run the View Permissions and User Access Control report to verify the view and user access control permissions have been migrated as you expected. You can run the report against one or more Entuity servers. The report comprises of a series of optional tables that detail user and user group access to views and devices that you can select to include to the report:

- **Show group membership**, includes to the report a table that lists for each user, by Entuity server, the user groups of which they are members.
- **Show group view access**, includes to the report a table that lists for each view, by Entuity server, the devices available through that view.
- **Show device user access membership**, includes to the report a table that lists for each device, by Entuity server, the users that have access.
- **Show device access membership**, includes to the report a table that lists for each device, by Entuity server, the users that have access.
- **Show user's tool permissions**, includes to the report a table that lists for each user group, by Entuity server, the tools to which they have access.

To run the View Permissions and User Access Control report:

1) Click **Reports**.
2) Click **Administrative Reports**. Entuity displays the list of available reports.
3) Click **View Permissions and User Access Control**.
4) Set the report options and run the report.

Groovy Script Version Change

Groovy Script is updated from Groovy 1.0 to Groovy 2.4. You should review your scripts, for example Groovy 2.4:

- Includes the additional keyword `trait`. If you developed your own Groovy scripts and used a variable or method called `trait` then after upgrading to Entuity 15.5 that code will result in a syntax error. For example a rule or trigger will fail and you can find an entry in *entuity_home*`\log\eventEngine.log`.

  Before upgrading to Entuity 15.5 you should review your Groovy code for the new keyword `trait` and rename any methods and variables called `trait`.

- Handles differently to Groovy 1.0 implicit nested iterations of the form:

```
list1.each.subList1.each {

  …

}
```

  So that inside the nested loop you have a different structure as the **it** context. You should explicitly define nested loops:

```
list1.each {
  it.subList1.each {
```

```
        …
    }
}
```

- In some cases handles differently to Groovy 1.0 automatic data type conversions. For example you may have to be more specific when testing a variable within an if statement (it does not always handle all variable types as if they were Boolean).

Removed Support for TLS 1.0

Entuity has removed support for TLS 1.0 (Transport Layer Security protocol) where serious security vulnerabilities have been exposed, for example to POODLE and BEAST. Entuity 15.5 improves server to client security by restricting support for the TLS protocol to the more secure TLS 1.1 and TLS 1.2 versions.

If you have enabled SSL and access the Entuity web UI using a browser without TLS enabled then the browser will raise a TLS not enabled type error. By default TLS1.1 and TLS1.2 are not enabled in Internet Explorer 10. You can enable TLS through the Internet Explorer 10 Internet Options settings.

Deprecated Daily Event Summary Streams

These Daily Event Summary streams have been deprecated:

- DeviceEventDaily
- MonitoredCompEventDaily
- PortEventDaily
- RootEventDaily
- ViewEventDaily.

The existing data will be gradually aged out. If you make use of these streams, for example in Flex Reports, and want to re-enable their update please contact your Entuity Support representative.