



User Management Resource Administrator

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Name generation

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Introduction

In Active Directory, a user has many different names. Some of these names have to be unique, which means that you cannot have another user account with the same name. UMRA can generate all user names used in Active Directory, including these unique user names. To generate these names automatically, UMRA uses name generation algorithms.

Before you start reading this guide, you should have a basic understanding of the concept of variables. For more information, see the *UMRA Basics* user guide.

Generating user names

Using the built-in name generation algorithms

In Active Directory, many different user names can be found:

- CommonName
- sAMAccountName – Must be unique within the domain
- User-Principal-Name - this internet style login name is the SAM Account Name combined with the domain it is defined within, making it unique within a forest.
- Given-name
- DisplayName
- Etc.

UMRA comes with a set of built-in name generation algorithms to generate all these names automatically. A name generation algorithm is a set of rules which defines the following:

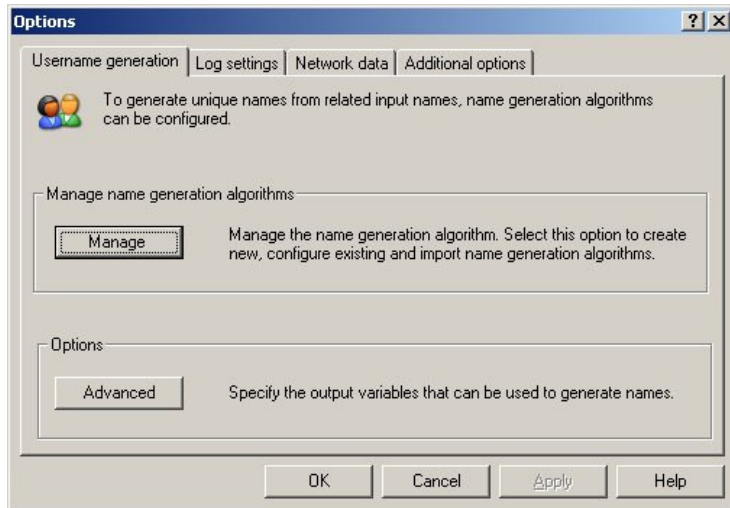
1. How one or more names can be composed from other names. By default, the first, middle and last name of a user are used to generate the above mentioned user names.;
2. How the resulting names can be made unique.

This set of rules can be defined in many different ways and completely in compliance with company naming conventions.

Generating Active Directory names based on the user's first, middle and last name

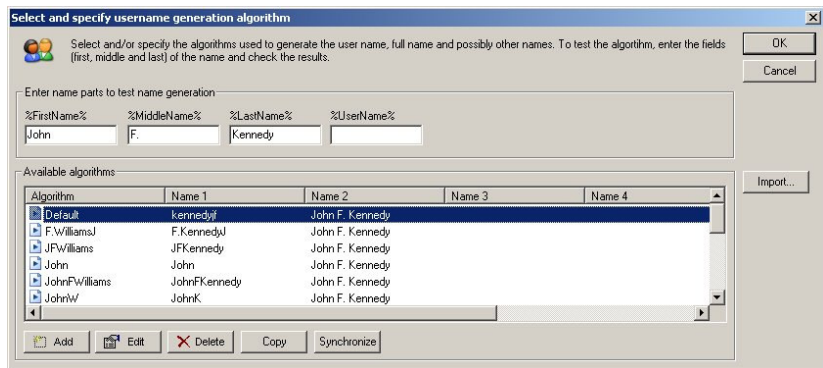
By default, a name generation algorithm can generate all user names in Active Directory based on the first, middle, and last name of a user. To see the various name generation results when using the standard name generation algorithms in UMRA, you can perform the following test:

1. In the **UMRA Console**, select **Tools→Options** and click the **Manage** button in the **Manage name generation algorithms** section.



The **Select and specify user name generation algorithm** comes up, in which example values are shown for the input names, a list with available algorithms and the results of these algorithms according to the specified values of the input names.

2. Enter the names "John", "F." "Kennedy" in the %FirstName%, %MiddleName% and %LastName% fields respectively to see the results of each of the available name generation algorithms.



Note that by default, UMRA generates two output names, which are displayed in the Name1 and Name2 columns respectively. Entering "John", "F." "Kennedy" results and choosing the **Default** name generation algorithm results in the following two output names:

Name1 = kennedyjf

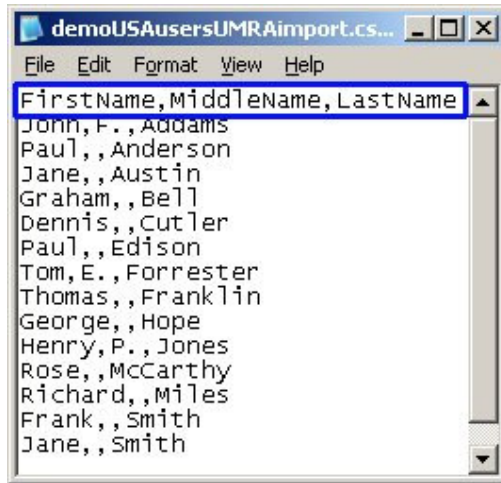
Name2 = John F. Kennedy

Together with the user's first, middle and last name, these output names can be used to specify all user names for an account.

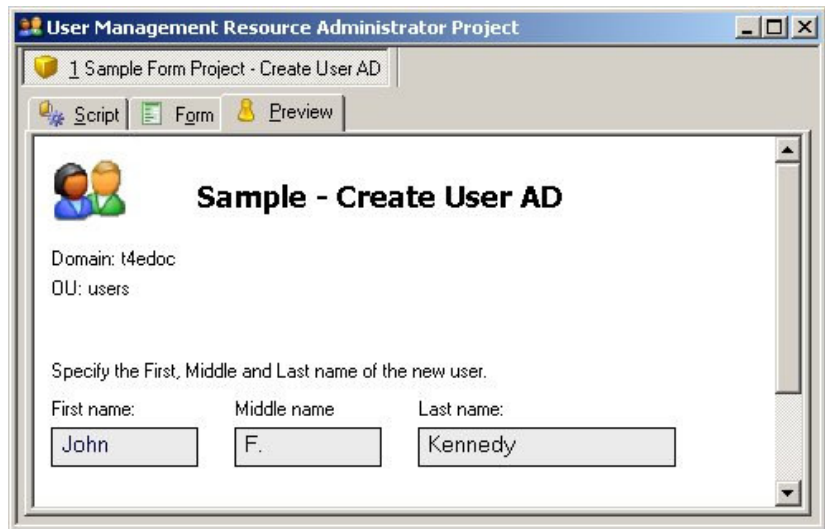
Specifying input names

The first, middle and last name of a user can be obtained in various different ways:

- Read directly from an input file



- User input in a form



- Database query

Using variables to specify input names

In practice, UMRA uses variables to specify input (and output) names. The input from a CSV file, form or database is linked to a variable (e.g. **%FirstName%**, **%MiddleName%** and **%LastName%**). In turn, these variables can be used for the following purposes:

- to provide input for the name generation algorithm to generate other user names;
- to specify some of the user names in Active Directory.

If the first, middle and last name are entered by the end user in a form for instance, this information can be linked to the variables **%FirstName%**, **%MiddleName%** and **%LastName%**. With the value of these variables you can specify the following user names:

Name attribute Active Directory	Variable
Given-name	%FirstName%
Initials	%MiddleName%
Surname	%LastName%

Using variables to specify output names

Based on the value of the variables **%FirstName%**, **%MiddleName%** and **%LastName%**, the default name generation algorithm will generate the remaining user names and store the result in the variables **%FullName%** and **%Username%**. These variable values can then be used to set various name attributes as shown in the table below:

Name attribute Active Directory	Variable
CommonName	%FullName%
sAMAccountName	%Username%
User-Principal-Name	%Username%@<Domain_name>
DisplayName	%FullName%

Customizing name generation algorithms

In some cases it is not sufficient to use the built-in name generation algorithm. This could be the case when your company has specific requirements regarding naming conventions. For such cases, it is possible to customize the way in which an output name is generated.

Name generation methods

A name generation method performs the following tasks:

- it specifies in detail how a single output name is generated based on one or more input names (e.g. first name, middle name, last name).
- it can ensure the uniqueness of a user name. This is explained in more detail in *Using a method to create unique user names*.

Using a method to generate output names

To generate an output name (e.g. %Username%, %FullName%), a name generation algorithm uses a name generation method.

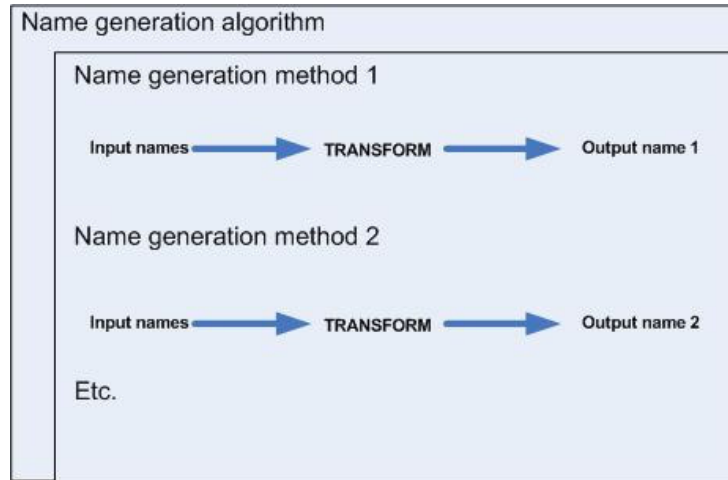


Figure 1 – A name generation method uses input names to construct a new output name

A method could take the following input names, for instance:

%FirstName% = John
 %MiddleName% = F.
 %LastName% = Kennedy

and transform these names into a new output name which can be created to specify, amongst others, the SAMAccountName:

jfkennedy

You will clearly see that in this case:

“John” must be transformed to “j”
 “F.” must be transformed to “f”
 “Kennedy” must be transformed to “kennedy”.

These transformations are achieved by using formatting functions. UMRA comes with a wealth of formatting functions to change the value of a variable.

The table below shows which formatting functions can be used for the method described above to obtain the new name parts.

Input name	Formatting function(s)	Example	Result
%Firstname%	1. Shorten name: Convert to the first character of the name	John	J
	2. Case conversion: convert to lowercase	J	j
%Middlename%	1. Shorten name: Convert to the first character of the name	F.	F
	2. Case conversion: convert to lowercase	F	f
%Lastname%	1. Case conversion: convert	Kennedy	kennedy

	to lowercase		
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The new name parts "j", "f" and "kennedy" together make up the new output name.

Using a method to create unique user names

In many cases you will want to create output names which are unique. When creating user accounts in Active Directory for instance, there are two user name attributes which must be unique:

- SAM Account Name
- User Principal Name

To ensure the uniqueness of user names, you can specify an iteration for a name generation method. The most simple form of iteration is the addition of a sequential number at the end of a generated user name (e.g. johnw1, johnw2, johnw3, etc.). Using iteration, the same method can be applied again and again until the generated output name has been made unique (see Figure 2).

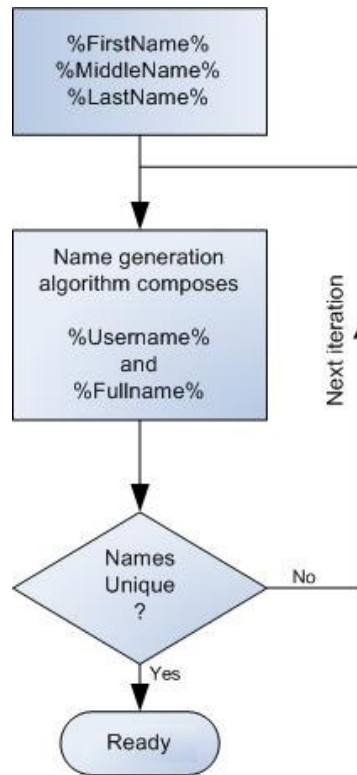


Figure 2 – Generating unique output names

The number of iterations for each method and the iteration sequence can be specified.

If the generated output name is not unique after one pass, a new output name will be generated using the same method with the specified iteration sequence. If the number of iterations has exhausted the specified number of iterations for the method, the algorithm will continue

with the next method. This process will stop when a unique name has been generated.