Digit pattern matching is often based upon the “location” of the station. Location flowchart is found on page 3

Capture digits dialed until a pattern is matched in the dialplan-analysis table. “List dialplan analysis” and “list dialplan analysis location X” (longest pattern wins).

Collect Digits (i.e. user picks up phone and dials digits)

Pattern is used as a dial access code, typically a trunk access code (TAC). “list trunk-group” to see the TACs in use.

Typically analog trunk groups are the only type that can be dialed via TAC.

AAR or ARS

Check the AAR digit conversion table to determine if this digit pattern should be converted. “list aar digit-conversion” and “list aar digit-conversion location X” (longest pattern wins) Use the “conv” column to determine if additional translations are allowed after this one

AAR or ARS Loop

Check the ARS digit conversion table to determine if this digit pattern should be converted. “list ars digit-conversion” and “list ars digit-conversion location X” (longest pattern wins) Use the “conv” column to determine if additional translations are allowed after this one

AAR/ARS Loop

Check the following for a pattern match:
• extensions
• VDNs
• hunt group pilot numbers
• Announcements
• Attendants

Addl Conv Allowed?

No

Yes

Net=ext?

No

Yes

Exist in table?

No

Yes

Extension Loop

Determine Route Pattern (Page 2)

Convert allowed?

No

Yes

Yes

No

AAR

Determine Route Pattern (Page 2)

ARS

Yes

Conv allowed?

No

Yes

Yes

No

AAR

Determine Route Pattern (Page 2)

ARS

Yes

Conv allowed?

No

Yes

Yes

No

AAR

Determine Route Pattern (Page 2)

ARS

Yes

Conv allowed?

No

Yes

Yes

No

AAR

Determine Route Pattern (Page 2)

ARS

Yes

Conv allowed?

No

Yes

Yes

No

AAR

Determine Route Pattern (Page 2)

ARS

Yes

Conv allowed?

No

Yes

Yes

No

AAR

Determine Route Pattern (Page 2)

ARS

Yes

Conv allowed?

No

Yes

Yes

No

AAR

Determine Route Pattern (Page 2)

ARS

Yes

Conv allowed?

No

Yes

Yes

No

AAR

Determine Route Pattern (Page 2)

ARS

Yes

Conv allowed?

No

Yes

Yes

No

AAR

Determine Route Pattern (Page 2)

ARS

Yes

Conv allowed?

No

Yes

Yes

No

AAR

Determine Route Pattern (Page 2)

ARS

Yes

Conv allowed?

No

Yes

Yes

No

AAR

Determine Route Pattern (Page 2)

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Yes

Conv allowed?

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Yes

No

AAR

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Conv allowed?

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AAR

Determine Route Pattern (Page 2)

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Conv allowed?

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Conv allowed?

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Conv allowed?

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Conv allowed?

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Yes

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AAR

Determine Route Pattern (Page 2)

ARS

Yes

Conv allowed?

No

Yes

Yes

No

AAR

Determine Route Pattern (Page 2)

ARS

Yes

Conv allowed?

No

Yes

Yes

No

AAR

Determine Route Pattern (Page 2)

ARS

Yes

Conv allowed?

No

Yes

Yes

No

AAR

Determine Route Pattern (Page 2)

ARS

Yes

Conv allowed?
At this point in the routing, we have a location, digit pattern, and a network (AAR or ARS). Also, we are done with digit manipulation.

Check the AAR analysis tables. "list aar analysis" and "list aar analysis location X". (Longest pattern wins). The pattern will correspond with a Route Pattern and a Call Type.

Check the ARS analysis tables. "list ars analysis" and "list ars analysis location X". (Longest pattern wins). The pattern will correspond with a Route Pattern.

Check the Station’s COR (class of restriction) to determine its FRL (facility restriction level)."display station xxxx" and check the COR value. Then "display cor X" to get the FRL.

Loop through the trunk groups listed in the route steps in the Route Pattern from the aar or ars lookup. "display route-pattern x".

Check the phone’s FRL is the same or higher than the FRL of this route step.

Use the originating extension and selected trunk group to determine the caller-id to use for this call. "list public-unknown-numbering" to find the extension length, extension pattern (longest pattern wins) and trunk group. This will correspond with a CPN prefix and total digit length. Use this to generate the called-party-number for the outbound call.

Determine the numbering format for this trunk group. In the "display trunk x" form on page 3, check the “Numbering Format”. Note that this field can be overridden in the route-pattern. "display route-pattern x" contains a “Numbering Format” column in the bottom right.

The Prefix Mark is only applicable for FNPA and HNPA call types. You can skip to “Call Attempt” for typical installations.
Avaya Communication Manager

How to determine a station’s location

When the station goes off-hook, this is how the CM determines its location.
Much of the routing logic depends upon the station’s location.

Using the station’s port, determine IP vs. TDM (i.e. Analog/Digital). If TDM, determine its network or media gateway. “display station xxxx” and check the “Port” field. It will be in one of the format:

- nnnVnnn for media gateways (where n is a number and V is the actual letter V)
- nnnXnnnn for port networks (where n is a number and X is a letter)
- Snnnnnn for IP phones (where n is a number and S is the actual letter S)

Check the “Location:” field of page 1 of the station form “display station xxxx”

Field Populated?

Yes

IP?

Yes

No

Collect Digits (Page 1)

Use this as location

Use this value X to check the media gateway’s location with “display media X” and check the “Location” field.

Using the phone’s IP address, determine the network region using the IP Network Map (“display ip-network-map”).

You can see the phone's IP address and assigned region with “status station xxxx”. The “Reg Set End” field on page 4 is the phone’s IP address and the “Rgn” is the network region.

Media Gateway?

Yes

Port Network?

Yes

No

Use default location 1

Use this as location

Collect Digits (Page 1)

Using the region from the ip-network-map, “display ip-network-region X” and check the Location field.

Match in IP Network Map?

Yes

No

Field Populated?

Yes

No

Use this as location

Collect Digits (Page 1)

Collect Digits (Page 1)

Collect Digits (Page 1)

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Avaya Communication Manager - How to process the Prefix Mark

When the CM routes a call to Home or Foreign NPAs (call type HNPA or FNPA), the prefix mark determines how the dialed digits will be manipulated.

Manipulate the dialed digits based upon:
- The matched digit pattern in the aar analysis table
- The call type in the aar analysis table for this digit pattern
- The "home" areacode based upon the location. "list locations" and check the City/Area column
- The "pfx Mrk" of the trunk group in the route-pattern’s route step "display route x"
- In some cases, the classification of the dialed digits into "Local" or "Toll" as determined by the toll table. "list toll all" to view this table.

You can avoid this manipulation by simply setting all USA call types to "NATL". These complex prefix rules were simplified by the North America Numbering Plan in 1995.

However, for legacy installations or to support 7-digit dialing in certain rate centers, use the table below to see how the Avaya Communication Manager will modify the dialed digits based upon this prefix mark.

<table>
<thead>
<tr>
<th>Prefix Mark</th>
<th>Call Type</th>
<th># Digits Outpulsed</th>
<th>Prefix Outpulsed</th>
<th>Plain English</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 or blank</td>
<td>(1)+10D</td>
<td>FNPA</td>
<td>10D</td>
<td>None</td>
</tr>
<tr>
<td>0 or blank</td>
<td>(1)+10D</td>
<td>HNPA</td>
<td>7D</td>
<td>None</td>
</tr>
<tr>
<td>0 or blank</td>
<td>7D</td>
<td>HNPA</td>
<td>7D</td>
<td>None</td>
</tr>
<tr>
<td>0 or blank</td>
<td>1+7D</td>
<td>HNPA</td>
<td>7D</td>
<td>1+</td>
</tr>
<tr>
<td>1</td>
<td>(1)+10D</td>
<td>FNPA</td>
<td>10D</td>
<td>None</td>
</tr>
<tr>
<td>1</td>
<td>(1)+10D</td>
<td>HNPA</td>
<td>7D</td>
<td>None</td>
</tr>
<tr>
<td>1</td>
<td>7D</td>
<td>HNPA</td>
<td>7D</td>
<td>None</td>
</tr>
<tr>
<td>1</td>
<td>1+7D</td>
<td>HNPA</td>
<td>7D</td>
<td>1+</td>
</tr>
<tr>
<td>2</td>
<td>(1)+10D</td>
<td>FNPA</td>
<td>10D</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>(1)+10D</td>
<td>HNPA</td>
<td>7D (Local)</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>7D</td>
<td>HNPA</td>
<td>7D (Local)</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>7D</td>
<td>HNPA</td>
<td>7D (Toll)</td>
<td>1+</td>
</tr>
<tr>
<td>2</td>
<td>1+7D</td>
<td>HNPA</td>
<td>7D</td>
<td>1+</td>
</tr>
<tr>
<td>3</td>
<td>(1)+10D</td>
<td>FNPA</td>
<td>10D</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>(1)+10D</td>
<td>HNPA</td>
<td>7D (Local)</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>7D</td>
<td>HNPA</td>
<td>7D (Local)</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>7D</td>
<td>HNPA</td>
<td>10D (Toll)</td>
<td>1+</td>
</tr>
<tr>
<td>3</td>
<td>1+7D</td>
<td>HNPA</td>
<td>10D</td>
<td>1+</td>
</tr>
<tr>
<td>4</td>
<td>(1)+10D</td>
<td>FNPA</td>
<td>10D</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>(1)+10D</td>
<td>HNPA</td>
<td>7D</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>7D</td>
<td>HNPA</td>
<td>7D</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>1+7D</td>
<td>HNPA</td>
<td>7D</td>
<td>None</td>
</tr>
</tbody>
</table>

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